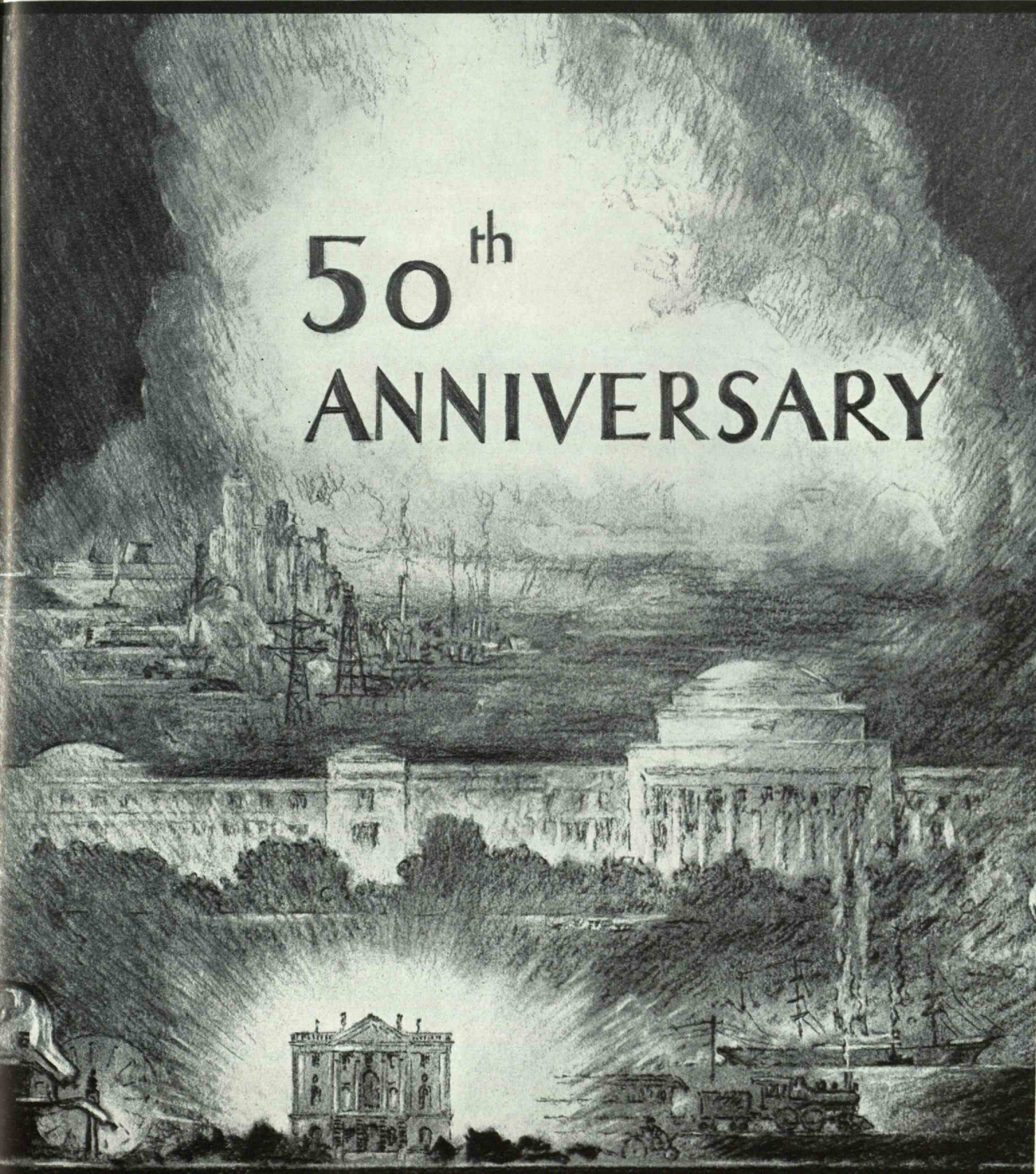


TECHNOLOGY

REVIEW

January 1949

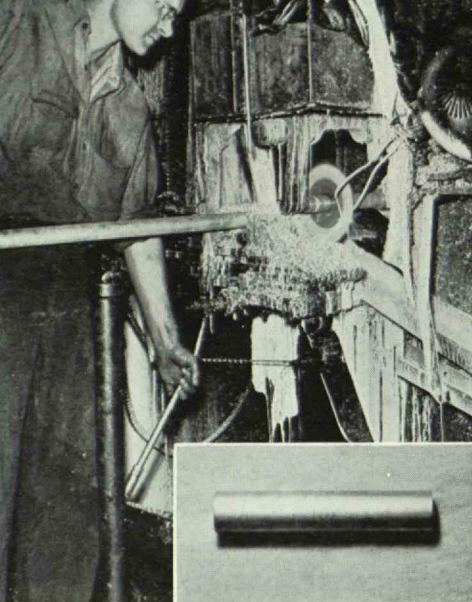
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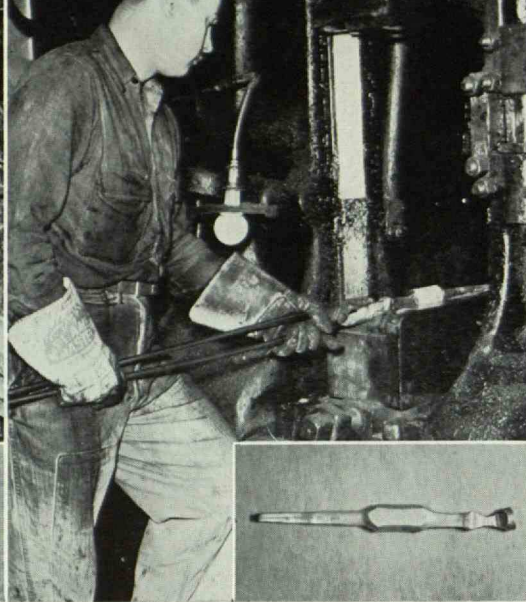
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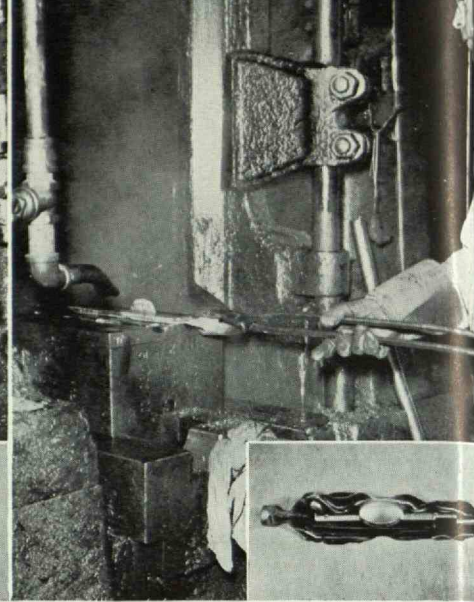
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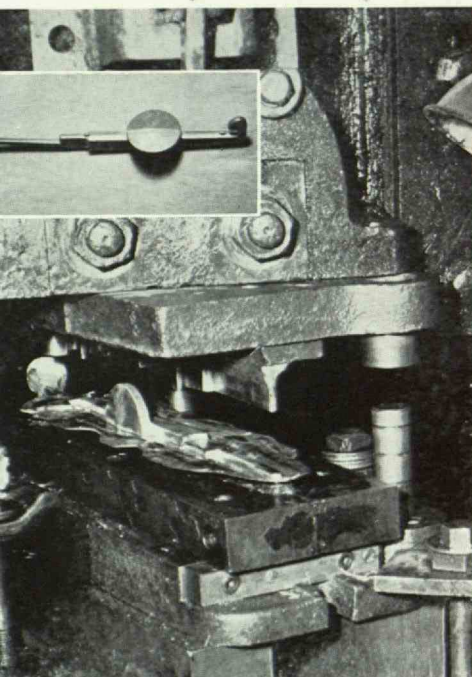
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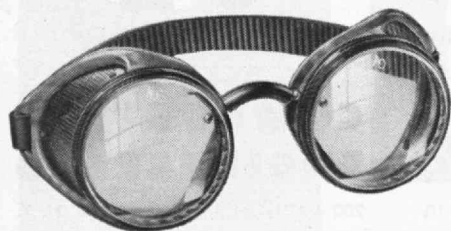


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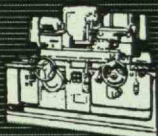
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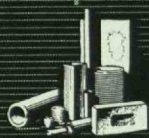
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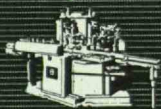
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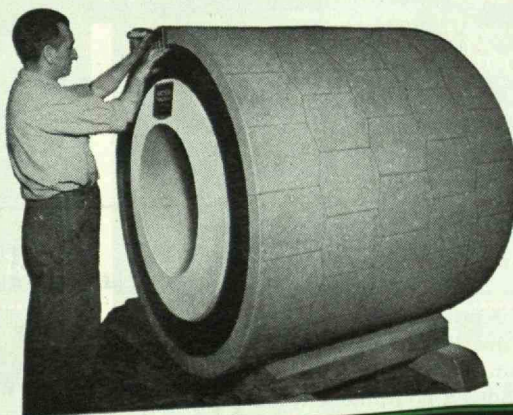
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WAY back in the woods Norton starts to have a part in producing your newspaper—axes and saws sharpened by Norton grinding wheels fell the trees and cut them to pulp wood lengths.

Then at the paper mill the wood is ground into pulp for newsprint by Norton Pulpstones—gigantic ten-ton, segmental grinding wheels as large as six feet in diameter and as wide as 66"—wheels developed by Norton research to replace nature's sandstones.



The machines that convert the pulp into paper and the complicated presses which print your newspaper contain many rolls and other parts precision-produced by Norton grinding machines and grinding wheels.

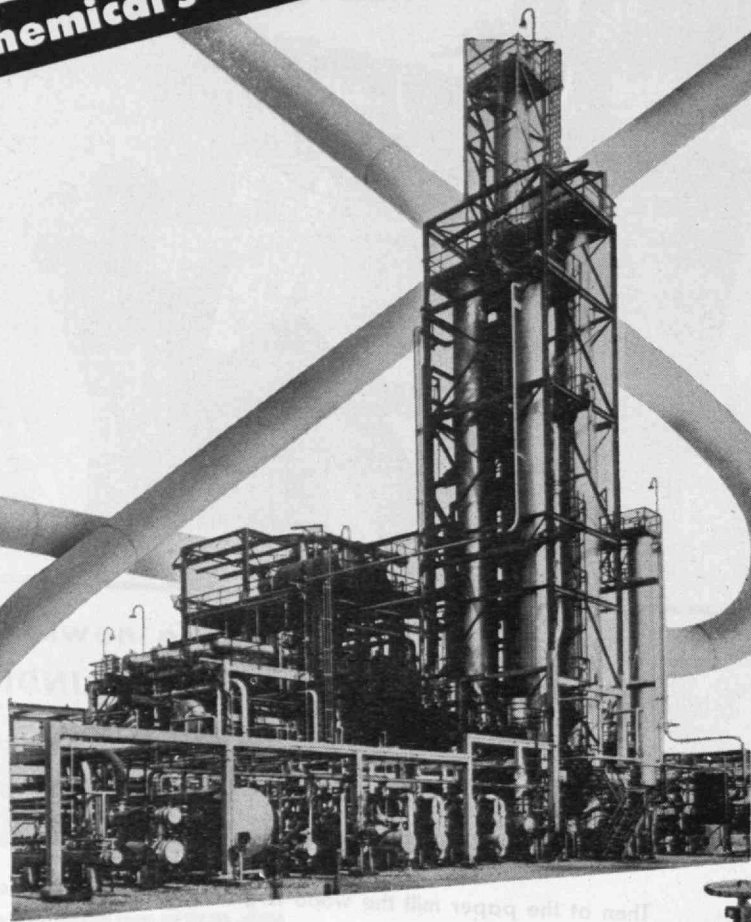
Norton Refractories are important, too—Alundum Laboratory Ware is used in the paper mill laboratories, Crystolon Brick in the power plants.

NORTON

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Jefferson Chemical's ethylene plant—



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Large ethylene plants are much like big petroleum refining units.

An ethylene plant must be designed for high yields, varying charge stock compositions, economical operation and minimum investment costs. Fundamental design must take a long term view of the plant—ease of operation, long on-stream periods, minimum turnaround time and low maintenance costs.

Long range thinking, good engineering, careful planning by Jefferson Chemical Company and Lummus are reflected in the performance of this ethylene plant at Port Neches. This plant is producing high yields of ethylene from varying charge stock compositions. When shut down for scheduled inspection after five months initial run, turnaround was completed in about fourteen days. Examination showed equipment to be unusually clean and in good mechanical condition.

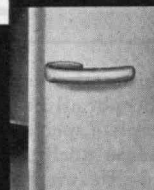
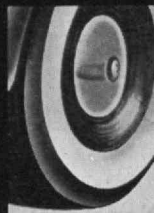
Playing an important part in the high yields of this ethylene plant are the Lummus Cracking Heaters, especially designed to obtain required temperature-time relationship with minimum coke deposition. On-stream periods of two months have been obtained and there are good possibilities of extending these periods.

Including an ethylene plant now under construction, Lummus has designed four plants for the production of ethylene from petroleum, with a total capacity of approximately half million pounds per day.

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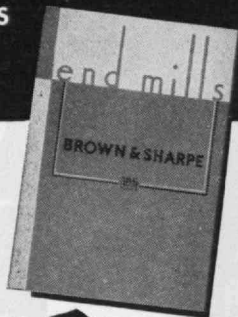
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THE TABULAR VIEW

Editor-Publisher. — Successively student of architecture, infantry officer in World War I, assistant director of the Division of Industrial Coöperation, assistant dean of students, editor of *The Review*, dean of students, publisher of *The Review*, chairman of the Technology Loan Fund, and executive vice-president of the Alumni Association — all at the Institute, with the obvious exception of war service — H. E. LOBDELL, '17, has been associated with *The Review* for half of its five-decade existence. Mr. Lobdell records (page 155) the significant events in *The Review's* struggle to provide a chronicle of events relating to M.I.T., its Alumni, and matters of scientific and technical interest.

Editor-Poet. — This month, *The Review* breaks its practice of hewing strictly to prose, and presents (page 161) a piece on geology and engineering construction in the language of a poet by former *Review* editor F. G. FASSETT, JR. Upon acquiring a youthful taste for printer's ink in the Waterville (Maine) *Sentinel*, which his father edited, Mr. Fassett studied at Colby College and took graduate work at the University of Maine and at Harvard University. He was also reporter, correspondent, and editor of Maine newspapers before becoming a professor of English at M.I.T. In 1945, Professor Fassett became director of the Office of Publications and Public Relations of the Carnegie Institution of Washington.

Editor-President. — Third of *The Review's* former editors to be represented in this issue is JAMES R. KILLIAN, JR., '26. Bespeaking the independence for which New England has been so well known, President Killian, whose honors include the degree of doctor of engineering from Drexel Institute conferred on December 14, presents a stout case (page 162) for strongly financed, privately endowed institutions of learning. Dr. Killian's administration of Institute affairs is widely known. In this column, we emphasize his earlier work as writer on topics in science and engineering, teacher of journalism, editor of *The Review*, past national vice-president of the honorary journalistic fraternity, Pi Delta Epsilon, past chairman of the Board of Publication for *The Technology Press*, and (with Harold E. Edgerton, '27) coauthor of *Flash!* — a beautifully executed volume on the technique of modern high-speed photography.

Editor-Professor. — Not only because he is author of many scientific papers and two volumes on science (*Atoms in Action* and *How Things Work*) does GEORGE R. HARRISON, Dean of Science, qualify under the boldface paragraph headings of this page. He also qualifies as valued contributor to *The Review*, and if not one of its former editors, Dean Harrison is editor of the *Journal of the Optical Society of America*. Prior to becoming dean of science in 1942, he was professor of physics. In his sprightly pronouncements (page 165) Dean Harrison views the Institute, and some of its administrative leaders, with kindly whimsey.



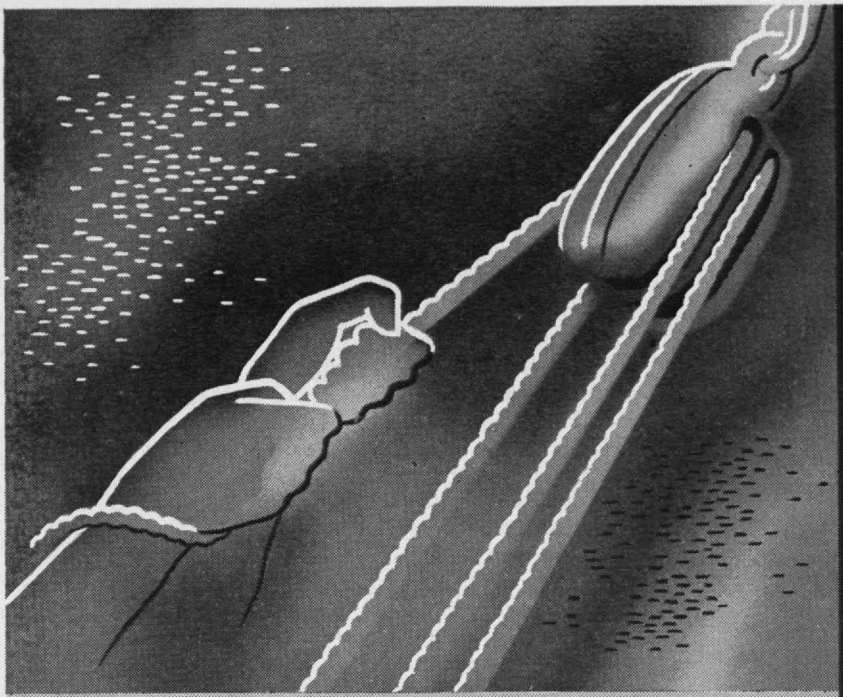
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MAIL RETURNS

Bread upon the Waters

[Letters such as the following from the president of the Republic of Italy, addressed to Dr. Compton, continue to indicate the worthwhile value of undergraduate ideas as expressed by the Foreign Student Summer Project which was effected last summer. — Ed.]

FROM LUIGI EINAUDI:

It was very kind of you to send me, through the courtesy of Gian Federico Micheletti, your message of September 20, 1948.

I was deeply interested in hearing, from the description contained in your letter and from the additional explanatory details given to me by Mr. Micheletti, of all the activity carried out by M.I.T. in the field of the exchange of ideas between students of different countries, and particularly as far as the group of the Italian postgraduate students is concerned.

Not only as a former professor in the Polytechnical Institute of Turin, but also as a constant and sincere promoter of any initiative aiming to the strengthening of international understanding in cultural and scientific fields, I wish to express to you my personal appreciation for the advantageous work done by the Institute of Technology with such high purpose. I consider it a real privilege that the Italian students were the guests of your institution during the past summer.

My best wishes for the increasing success of your initiatives and for your personal prosperity.

Rome, Italy

Timing

FROM DONALD R. STEVENS, '11:

May I compliment Ward Allan Howe not only for his excellent photograph on page 94 of the December, 1948, Review, but also for his choice of "The Invader" as the title.

I wonder whether he took the picture first and then thought of the title, or whether he thought of the title and then waited for the proper timing of train, sky, and tranquility. Rarely have I seen a photograph so beautiful, fully equaled by a title so inspiring.

Ridgewood, N.J.



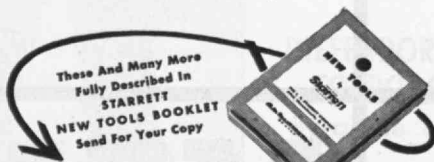
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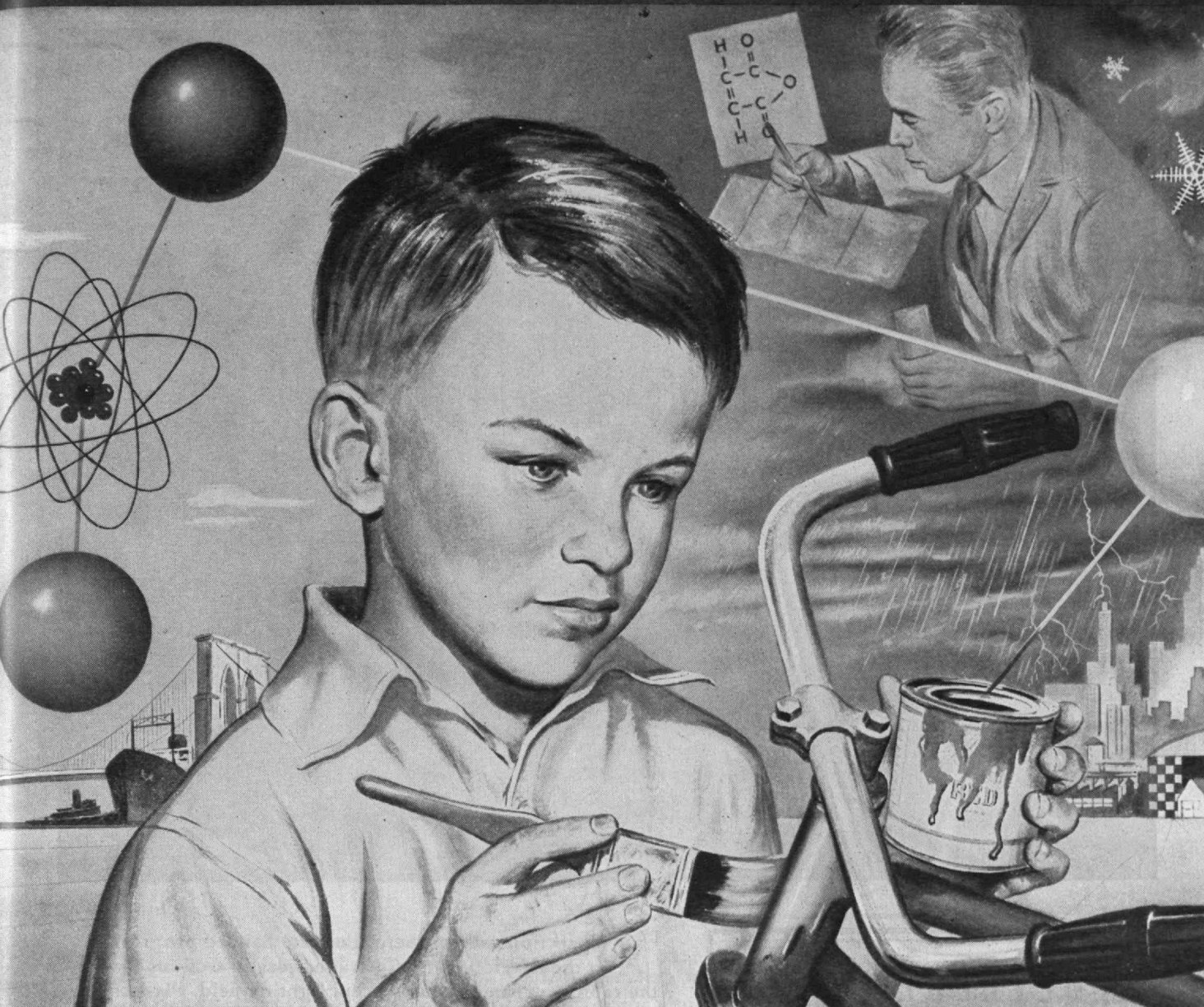
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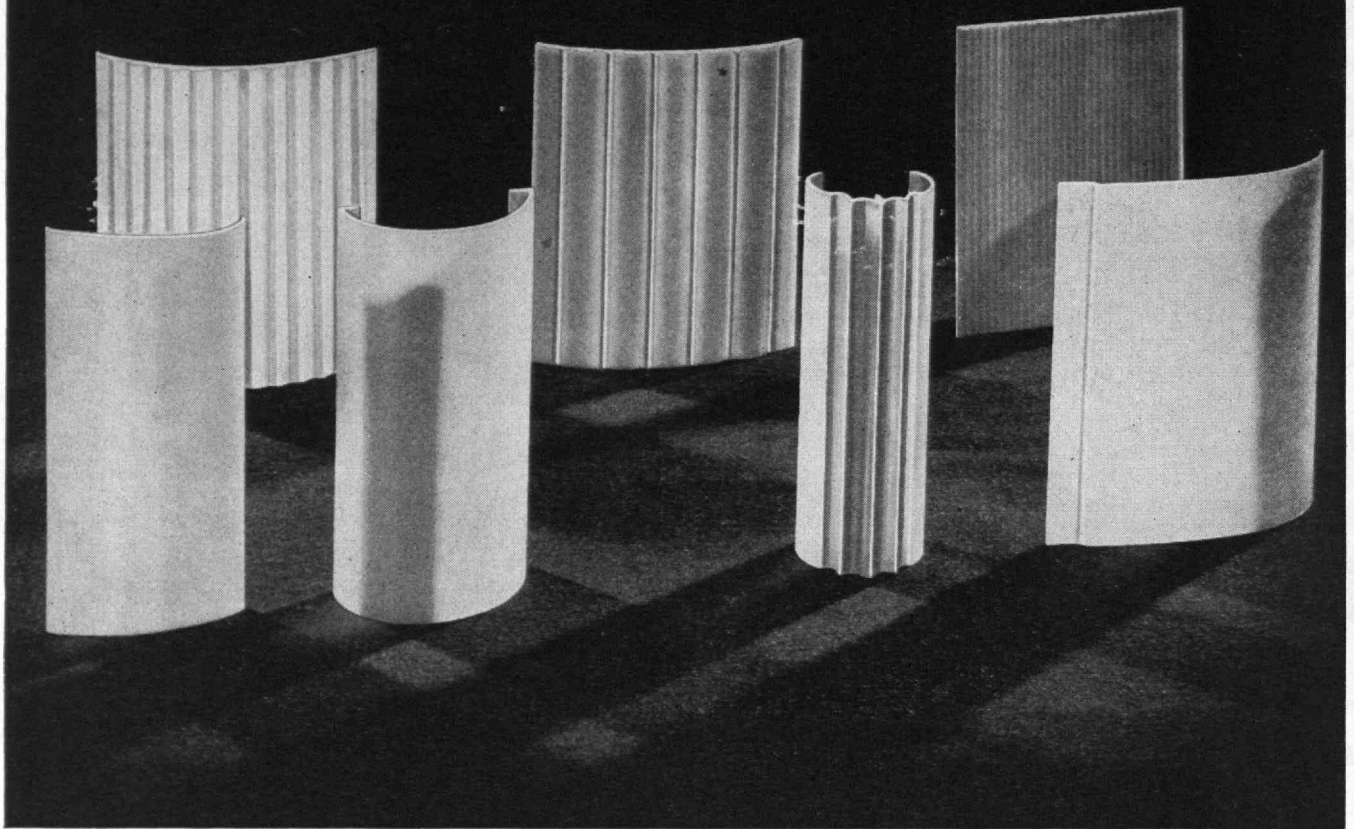
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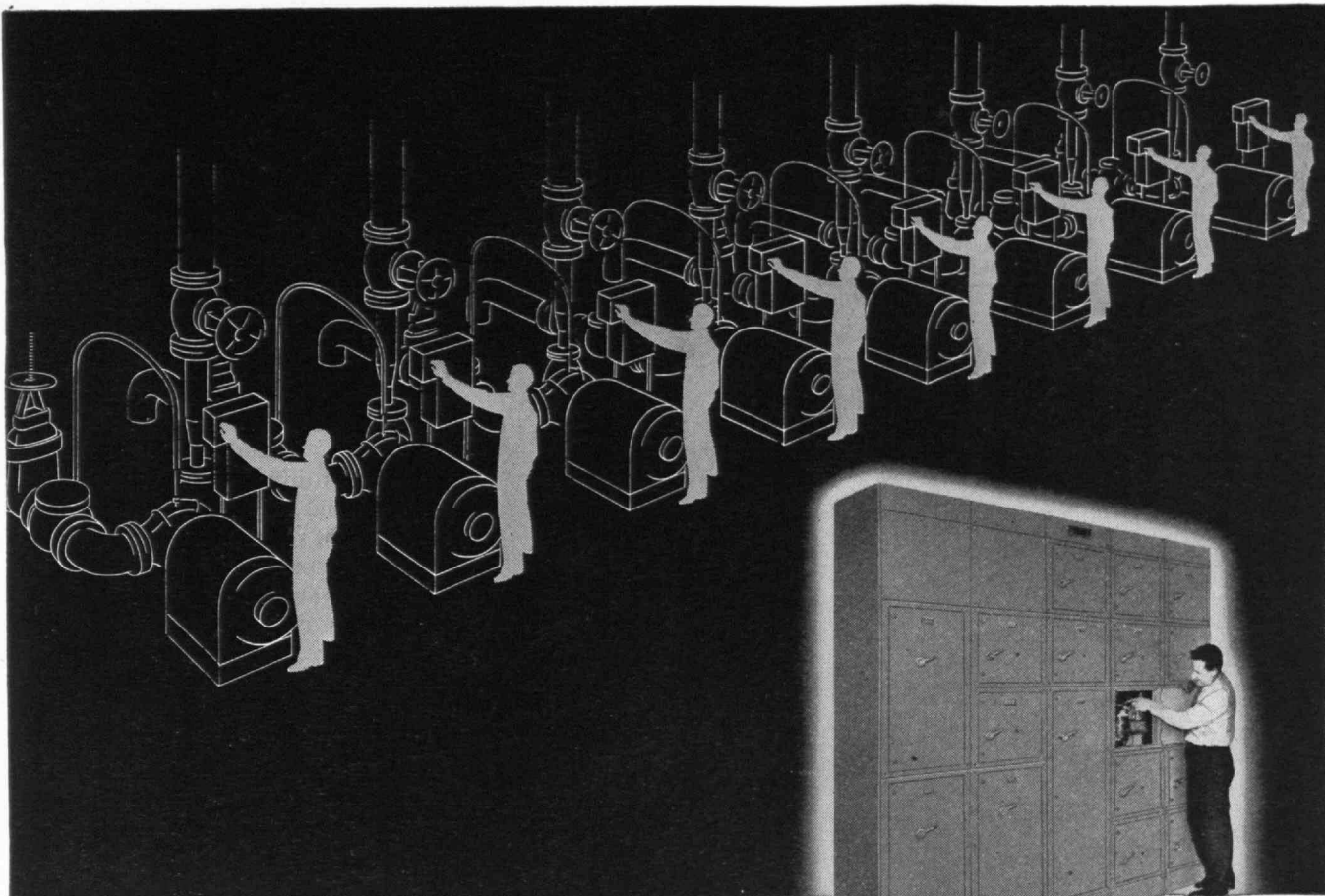
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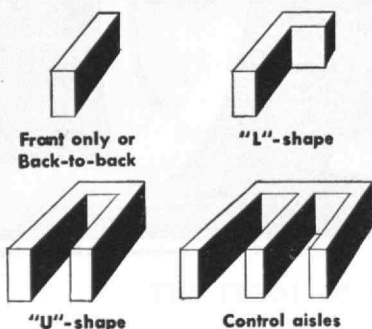


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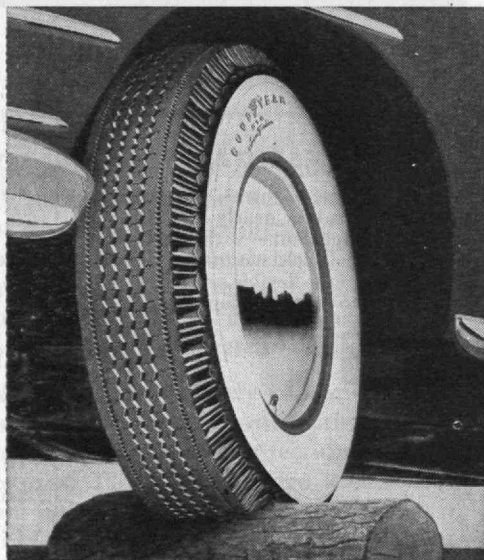
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EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Vol. 51

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The Evolving Page

Shown below, at approximately half size, are reproductions of those pages which ushered in a new decade of Review publishing. The three reproductions at the top of the page are from volumes issued quarterly. When the enlarged Review made its appearance on a monthly basis, issues were numbered with the beginning of the school year, rather than on a calendar year basis.

The Technology Review

Vol. I. JANUARY, 1899 No. 1

ANNOUNCEMENT

To a community groaning under an ever increasing weight of periodical literature, a new magazine is forced to present itself in an attitude of apology. Like those college men with whom its interests are to be most closely bound, THE TECHNOLOGY REVIEW must make plain its purposes, its capacity, its determination to be useful, before it can expect to receive recognition from a public too busy to be indulgent. Realizing this, and mindful, too, of the spirit and traditions of the Massachusetts Institute of Technology, THE REVIEW neither throws itself upon the charity of its friends nor prays them to be blind to its shortcomings. Doubtless it will need indulgence, doubtless its attainment will fall much below its aspiration; but if it does not so far succeed in its attempt as to gain support through feelings other than those of simple friendliness, the existence of THE REVIEW cannot be too quickly ended.

Few appreciate how vast and complicated the interests of the Massachusetts Institute of Technology have become. With students, past and present, in every State, and in almost every part of the world, occupied in all manner of work and every civic duty; with studies of great range and courses of wide divergence; with always new and ever more complex problems of education crying for solution, the Institute obviously stands in need of a clearing-house of information and thought, to increase its power, to minimize

The Technology Review

Vol. XI. JANUARY, 1909 No. 1

GREETING FROM THE PRESIDENT-ELECT

TO THE ALUMNI OF THE INSTITUTE:—

Gentlemen,—I have been so much touched by the cordial greetings that you have sent to me from various parts of the Union, that I take the first opportunity of assuring you collectively that I prize your good-will very highly, and shall strive to retain it. I know enough of the history of the Institute to realize, in a measure, how much it owes to the support of its alumni and I am pleased with the prospect that there will be no diminution of that support in the future.

I come to the Institute because of my profound conviction of the importance of sound technological training and of the splendid field for service that is thus opened to me. It has so often been my lot to urge the claims of technological education before an apathetic audience that it is a peculiar pleasure to address a body of men that needs no urging in the matter. You have all realized that, in the field of industry, rule-of-thumb has been unhorsed and science placed firmly in the saddle. You know, too, that, in the fierce struggle of today between individuals and nations, that man and that race is doomed that lacks the accurate knowledge which science fosters and the power which such knowledge gives to a mind that is alert.

Knowledge and power have doubtless been watchwords at the Institute throughout its history. I trust that they will ever remain so, and that whoever presides over its destinies will see that no effort is spared to make it respected as a place of sound learning and accurate knowledge, and that this knowledge is imparted under such conditions as

The Technology Review

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ROBERT E. BOWLES, Editor, Massachusetts Institute of Technology, Cambridge, Mass.
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ANNUAL ALUMNI DINNER SET FOR MARCH FIRST

It is to be hoped that the annual dinner of the Institute's alumni, set this year for Saturday, March 1, will be unusually well attended. It will be not only the first and best opportunity Technology men have had to talk over our work in the war, to find out what the other fellow and the other classes have been doing, but it will give an opportunity for all present to inspect the Walker Memorial as it is going to be in the future, cleared of military activity, the clubhouse of students and their activities and of the Faculty.

It is hoped that as many classes as possible will set their reunions for that date and will get together to inspect the Memorial in the afternoon before the dinner, which will be at seven o'clock in the Great Hall.

The speakers will be notable. Besides President Morse, who will review alumni activities for the year and act as toastmaster, the program will include Governor College of the Commonwealth of Massachusetts, President MacLaurin and Van Rensselaer Lansburgh, '98, who will reminisce about his experiences in Europe. Also, Walter Gordon Merritt of New York, expert attorney on labor litigation, will tell what we have to expect from labor conditions in the future.

The dinner will be inexpensive, to meet post-war time conservation conditions, and it is hoped that we shall have a record celebration.

THE ALUMNI COUNCIL.

IN MEMORIAM

In view of the fact that there are at present over eighty names on the Institute's roll of honored dead, the publication of whose memoirs and photographs would overflow the Review for a long time to come, we have tentatively discontinued that feature, which began only last issue, in the hope that arrangements can be made to publish brief notices and pictures of the entire list, in one pamphlet to be published either as a supplement to the Review or as an independent volume, possibly by Commencement next June. That would be the most fitting time, and we feel sure the alumni would be interested in such a volume.

THE EDITOR.

The TECHNOLOGY REVIEW

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EVOLUTION EVERYWHERE

A paleontologist views it as constant change

By HERVEY W. SHIMER

CONTINUAL change is the essential characteristic of life. It is obvious that the individual animals and plants that we see today are in some slight way different from what they were yesterday and what they will be tomorrow. In a similar way the vision of the paleontologist, which covers vast eras of the past history of the earth, notes that a gradual change has taken place in the larger units of life, the groups of organisms that constitute species and genera. Through the long periods of time wherein we may trace back the record of life, there may be discerned constant change of living forms into subsequent forms, each differing but slightly from its immediate predecessor. This is evolution, the change of one form into a different form under a sequence of cause and effect.

Soil is being constantly changed from solid rock through a complicated series of chemical and mechanical reactions; that is, soil is being constantly evolved. Under the increasing competition of modern times, a detailed knowledge of these evolutionary changes is becoming more and more essential to successful work in agriculture.

In my garden is planted the Cortland apple, formed in the New York Agricultural Station at Geneva in 1898 by hand fertilizing flower buds of the Ben Davis with pollen from McIntosh blossoms. The result was a combination of the hardness of the former and the flavor of the latter.

Here, too, grow the Concord grapes developed by Ephraim Bull from the wild Fox grape, probably through natural crossing with the Catawba, in 1849; the cabbage, brussels sprouts and cauliflower, all produced by selection from natural changes in the wild cabbage growing on the sea cliffs of the shores of Europe, and the maize, potato and tomato developed through selection by the Mayas and Incas from wild American stock.

What is true of these garden products is also true of nearly all other food plants cultivated by man. Man has either consciously united different forms, or, more usually, has selected from natural changes the forms most suited to his needs, but in all cases the result was a change into a different form under a sequence of cause and effect. When Luther Burbank wished to produce a spineless cactus he selected the least spiny plants of successive generations until he had a spineless one. The ancient Mayas of Central America by a similar process of selection produced the large edible tubers of the potato, the enlarged roots of the cassava, the large grain and ears of maize.

What is true of plants is true likewise of animals. Man has gradually been changing his domestic animals into forms better suited to his desires, from the earliest records to the present. The American-bred Boston terrier is the result of a cross between the English bull dog and the English terrier and the latter



HERVEY W. SHIMER, PROFESSOR OF PALEONTOLOGY AT THE INSTITUTE. THE ACCOMPANYING ARTICLE IS THE SUBSTANCE OF A CHAPTER IN AN IMPENDING BOOK BY HIM, TREATING SOME NEW ASPECTS OF THE THEORY OF EVOLUTION.

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THE TECHNOLOGY REVIEW

Vol. 41, No. 3

January, 1939



The Trend of Affairs

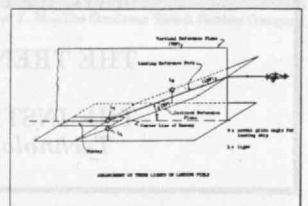
Trails in Space

THE power of cooperative investigation which is realistic enough to exhaust the possibilities of available existing materials before undertaking to construct new ones has been well illustrated at the Institute during the past year. The development of a blind-landing device for airplanes which bids fair to overcome one of the greatest hazards of aviation is the illustration. Previous systems utilizing "beam flying" have been only partially successful; a scheme which will give a fog-blinded pilot information about the position of his ship with respect to both its own horizontality and its relation to the landing field can be expected to come nearer complete satisfaction. And if the information can be got to the pilot in a form readily interpretable in geometric terms, so much the better.

If on a clear night an airplane nears a landing field, the pilot can be guided to a safe landing by means of three sources of light — one centered at ground level near the end of the field where the ship is to make contact, the others elevated aboveground opposite each other at each side of the field and some distance in front of the first light. The three thus sighted from above define a plane; if the pilot comes in on an imaginary line bisecting the plane, all will be well. This imaginary line is in fact a landing reference path. So reasoned Irving Metcalf of the Bureau of Air Commerce. Flying tests demonstrated the truth of his reasoning. Then developed the problem of getting the aid from such a light system reproduced in an airplane coming to land not on a clear night but in the midst of fog. An indirect application of the basic idea was needed.

For this, the Bureau of Air Commerce had recourse to M.I.T. The problem posed to a group headed by Professor Edward L. Bowles, '22, of the Department of Electrical Engineering was essentially this: to produce

in a fog-blinded plane in flight the illusion of the three lights, and to produce this illusion in such a way as to make clear the attitude of the plane and the direction of approach toward the field. Professor William M. Hall, '28, suggested that the gyroscopic equipment of the plane itself could be put to work in the solution, for this already gives information as to bank and climb, the aerial equivalents of the roll and pitch of a ship at sea. By the use of electrical circuits hooked to the gyro elements, involving the use of very delicate brushes only about three-thousandths of an inch in thickness, the gyroscopes were made to produce three spots of light on the screen of a cathode-ray oscillograph, thus creating the illusion in the plane of the unseen three lights on the field. Professor Charles S. Draper, '36, of the Course in Aeronautical Engineering brought his expertise with aerial instruments to bear on this phase of the problem.



Pictorial diagram, supplementing the adjacent story, showing the principle of the new blind-landing system. Here we see the straight line reference path down which a landing airplane may fly at its natural glide angle.

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THE TECHNOLOGY REVIEW

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January, 1949

The Trend of Affairs

Of Yesteryear

THE Review neither throws itself upon the charity of its friends nor prays them to be blind to its shortcomings. Doubtless it will need indulgence, doubtless its attainment will fall much below its aspiration; but if it does not so far succeed in its attempt as to gain support through feelings other than those of simple friendliness, the existence of The Review cannot be too quickly ended." Thus, in January, 1899, did The Review's first editor present the new journal "to a community groaning under an ever increasing weight of periodical literature." That The Review has been able to continue uninterrupted publication throughout the past five decades — that it is this month celebrating the golden anniversary of its first issue — is due, in no small measure, to the loyal support and indulgence which its readers have accorded it, and which have aided materially in developing this journal to its present status.

With some 12,000 subscribers, a sound financial structure, and half a century of past performance upon which to draw in building for the future, The Review can regard with satisfaction its past in which there have been chronicled matters relating to M.I.T. and other events of interest in the field of technology. Like any mortal, The Review progressed through the normal stages of living: It suffered the growing pains of childhood, the uncertainty and awkwardness of adolescence, and now appears to be settling down to a mature existence, meeting current exigencies as best it can. Some of the changes through which The Review has progressed are recorded in the lead article (page 155) by H. E. Lobdell, '17, whose close association with "that valued sheet" covers half its lifetime. Other changes are reflected in the frontispiece on the opposite page which images the first pages of those volumes published in years ending in the figure 9. Much as the tintypes, taken at periodic intervals and carefully preserved in the plush family album, record

the progress of family life, so does this reproduction of five intervals in The Review's history show, by subject matter and typography, the changes in its own mute way.

It comes about, then, that the review of anniversaries, which has featured the opening of January issues in recent years, takes on added significance this month, for The Review itself is justified in marching through our annual survey this January, 1949. But let us begin our annual review with the chronologically more distant events which occurred in years ending with 9.

Three hundred and fifty years ago, as Europe was embarking upon the opening of the era of science, Sir William Gilbert had concluded some 30 years of experimentation and was putting the finishing touches to his great volume *De magnete*. . . . The publication of this historic volume upset many erroneous notions which had been built up about the properties of magnets, and ushered in a new era in which philosophical speculation was to give way to experimental verification of conjectures and hypotheses in examining the world in which we live.

Two hundred years ago Pierre Simon Laplace was born in Normandy on March 28, and was destined to make important contributions in the field of celestial mechanics, some of which were subsequently applied to the burgeoning science of electricity. During 1749, in this country, Benjamin Franklin made two signal contributions to the science and engineering of electricity. As a result of his studies of atmospheric electricity, Franklin devised the lightning rod to protect buildings against lightning strokes. Important as was this contribution of applied science, perhaps an even greater one was made, in what we would now call theoretical physics, when Franklin proposed his single-fluid theory of electricity. The basic concepts which Franklin established were much more logical and simple than those required by the two-fluid theory which, in Franklin's time, had the predominant num-

ber of supporters. At the time, there was no way of proving, or disproving, either of the rival hypotheses, but history has vindicated the work of the versatile American statesman-philosopher whose single-fluid hypothesis has much in common with our present electronic concepts of electricity.

Several significant events in science and engineering occurred 150 years ago. The year 1799 marks the birth of Joseph Henry, Princeton Professor of Physics, who discovered self-induced electric currents and subsequently became the first secretary of the Smithsonian Institution. Count Rumford, whose home was in Woburn, Mass., for many years, aided the mechanistic science of his day by devising a means for eliminating or compensating for errors due to temperature and inequalities in the arms of a weighing balance, thus making a substantial contribution in the technique of determining mass. In Italy, Alessandro Volta invented the first primary cell or Voltaic pile, and definitely proved that the electric current produced by his pile was the result of chemical action and not a biological effect, as his compatriot, Luigi Galvani, had supposed. Volta's pile opened up the possibility of dealing with a steady flow of electric current instead of the temporary or transient flow which was the only possibility so long as electrostatics was the only field of electricity known.

The first half of the Nineteenth Century brought to light a wide variety of events significant to science and engineering. Charles Darwin and Abraham Lincoln were both born in 1809. In Denmark, during the winter of 1819 Hans Christian Oersted found that a continuous electric current produced a steady magnetic field. In this discovery, the long-suspected correlation between electricity and magnetism was first proved. In the same year Sir John Herschel in England discovered that sodium thiosulphate or "hypo" would dissolve silver halides or salts, and this discovery was to be of vast importance a few decades later with the beginnings of photography, since it made possible retention of a permanent photographic image after exposure. In this country, William A. Burt was granted a patent on the first typewriter on July 23, 1829, but several years were to pass before this important aid to business was to become a practical affair.

Rubber was first vulcanized by Charles Goodyear in 1839; this discovery made possible waterproof boots and raincoats, and laid the foundations for the automobile tire industry of the Twentieth Century. The year 1839 also saw the invention of an important alloy for bearings, to which the 40-year old Isaac Babbitt gave his name while in the employ of the South Boston Iron Company. Important developments during 1839 occurred in the field of photography. In this year, J. Nicéphore Niepce and Louis Daguerre of France described their invention of the daguerreotype photographic process before the Academy of Sciences. In England, Fox Talbot made the first photographic prints from paper negatives, and early in 1839 disclosed his technique of making calotypes in which the photographic image was made permanent through a process of fixation.

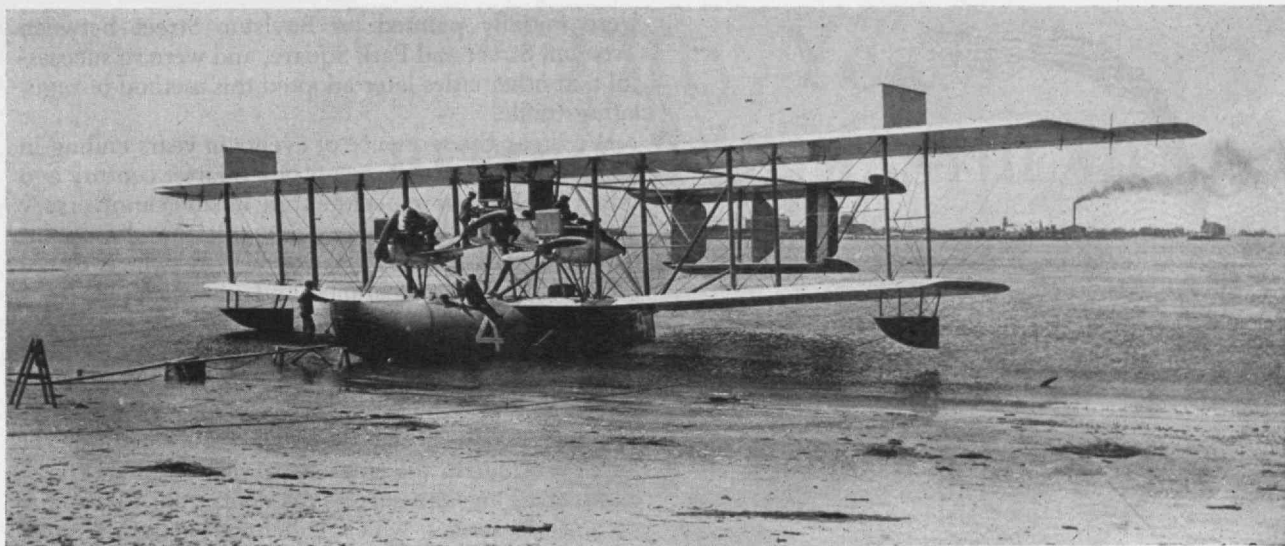
With the coming year we may celebrate the centennial of the California gold rush whose inauspicious beginning really occurred in December, 1848, when a

few gold nuggets were picked up from the tailrace of a mill owned by John A. Sutter. Sutter attempted to keep this find secret, but his efforts were not successful and 80,000 men reached the Coast in 1849. Although, in itself, this discovery has little direct technological interest, it did much to open the West for settlement, and thereby indirectly stimulated certain technological advances, particularly in agriculture, transportation, and communication. In this country, George H. Corliss invented the stationary steam engine bearing his name, thereby making a significant achievement of mechanical engineering during the last century. And, just a century ago, Gustav Robert Kirchhoff identified the "electroscopic force" of G. S. Ohm with the electrostatic potential of George Green, thereby establishing an important link in relating current and static electricity with its electrostatic counterpart.

During the last half of the Nineteenth Century, Charles Darwin's *Origin of the Species*, which appeared in 1859, caused much discussion and some consternation to not a few traditional beliefs of 90 years ago. In the same year, G. R. Kirchhoff and Robert W. von Bunsen, both of whom were professors of physics at the University of Heidelberg, began their brilliant series of investigations of the lines of the visible spectrum, which may be said to have founded the science of spectroscopy. Their work pioneered a sensitive means of identifying chemical elements, but these Nineteenth-Century physicists could hardly have guessed that their work would lay the foundation upon which Twentieth-Century physicists would build in examining the innermost structure of the atom. Also in 1859, the first oil well in America was drilled at Titusville, Pa., and about 2,000 barrels of petroleum were produced.

George Westinghouse received the patent for his air brake for railroad cars in 1869, and the first steel-arch bridge across the Mississippi River was begun at St. Louis by James Buchanan Eads in the same year. A decade hence, electric illumination came to the fore; Thomas Edison made the first practical incandescent electric lamp in 1879. In the same year the first photograph (made with the newly produced incandescent lamp as the source of light) was exposed at his Menlo Park Laboratory. In Newark, electric arc lights were installed for street lighting by Charles Brush in the same year. By the time another decade had come about, the Eiffel Tower in France was completed, and the Singer Manufacturing Company had built the first electrically operated sewing machine. Also in 1889, Henry Augustus Rowland, Professor of Physics at Johns Hopkins University, experimentally proved that a displacement current behaved the same as a conduction current of electricity so far as the magnetic effect it produced.

So much for our survey prior to the appearance of the first issue of *The Technology Review*; the rest deals with those events which this journal may regard as contemporary. We pass over the coming into being of *The Review*, which is chronicled elsewhere in this issue, and turn to record the birth, in 1899, of two other publications which could also celebrate their semi-centennial this year. One of these, the *Physical Review*, published by the American Physical Society which was formed in 1899, has been a landmark in



Curtiss Company

Three decades back, the first airplane flight across the Atlantic was made by the Navy's NC-4 designed by Professor Jerome C. Hunsaker, '12, George C. Westervelt, '06, and Captain Holden C. Richardson, '06. It used four Liberty engines developing 1600 horsepower, had a maximum wing span of 126 feet, and had a maximum speed of 84 knots for 12-ton load or 74 knots for 14-ton load.

publications in the physical sciences since its inception. The other, *Who's Who in America*, the first edition of which contained 8,602 biographies, has been an important reference work on contemporary leaders in all fields of endeavor. Still another publication which first appeared in 1899, but was short-lived, was the *Transatlantic Times*, a four-page newspaper first published at sea aboard the American liner *St. Paul* on August 8, 1899. News for this brief paper was obtained from Signor G. Marconi's wireless station at the Isle of Wight, 36 miles from the *St. Paul*.

Turning away from publications, we may recall that on January 24, 1899, Humphrey O'Sullivan in Lowell, Mass., obtained a patent for the first rubber heel on shoes. Meanwhile in Boston, Simmons College for women was chartered in 1899, three years before it was opened to students. In Hartford, the Hartford Electric Light Company is said to have been the first to use aluminum commercially for its transmission lines to bring power from its power plant at Tariffville to Connecticut's capital city. In the automotive field, the B. F. Goodrich Company of Akron made the first automobile clincher tires, and the self-starter was invented, making hand cranking unnecessary.

Forty years ago the first outboard engine was invented. The engine was a single cylinder one, weighing less than 50 pounds and developing one and a half horsepower. Also in 1909 appeared the first concealed beds which were swung on a pivot and hidden by doors or closets.

Three other events of 1909 — destined to influence the lives of Americans for many years to come — should be recorded. The income tax amendment to the Constitution was proposed to the various State legislatures on July 12, thereby laying the foundations by which individual wealth might be so redistributed as to put both the "have's" and the "have not's" in the same economic stratum. It was in 1909 that Rear Admiral Robert E. Peary first reached the North Pole. In the same year, radio communication was put to its first real test in saving lives at sea. On January 23 Jack Binns, radio

operator of the *S.S. Republic*, transmitted the distress signal when the *Republic* was rammed by the *Florida* off Nantucket Lightship in fog. Although the *Republic* sank as a result of this accident, only four of its 461 passengers were lost.

We skip another decade, to 1919, when this country was, as now, engaged in reconstruction after a world-wide war. Then, as now, aviation was attracting a good deal of attention and several events of note occurred during that first postwar year. On April 19, the first nonstop flight between New York and Chicago was made at an average speed of 106 miles per hour. The Atlantic Ocean was crossed by airplane for the first time in May when the Navy's NC-4 reached Plymouth on May 31 from its base at Rockaway, L.I., N.Y. As recorded in the following paragraphs, this feat has particular significance to readers of this journal. In mid-June came the first nonstop flight across the Atlantic and during the early part of July this ocean was spanned for the first time by a lighter-than-air ship which flew from East Fortune, Scotland to Roosevelt Field — a distance of 3,130 miles, in 108 hours, 12 minutes. Air-mail service to ships at sea was first effected on August 14 when mail was dropped from a plane to the deck of the *Adriatic*, one and a half hours after she had left her pier in New York City.

The Navy's transatlantic flight, in which the Atlantic was first crossed by airplanes, has special significance to Review readers for the part which a number of Technology Alumni played in this event. Perhaps a greater degree of objectivity — and certainly a better grasp of the atmosphere of the time — can be obtained by quoting from copy published at the time. An editorial in the May 1, 1919, issue of *Aviation and Aeronautical Engineering*, two weeks before the flight, comments in part in the following words:

However, while the greatest credit will justly be due to the men who first succeed in flying an aircraft across the Atlantic, a very great share of appreciation should go to the engineers responsible for the design of the victorious machine.



Reproduction of the first photograph to be transmitted across the Atlantic on December 1, 1924, by the Photoradiogram system devised by Richard H. Ranger, '11. Tests on picture transmission were carried out on a wavelength of 14,200 meters, with a transmitter having a power of 200 kilowatts—four times that of first-class broadcasting stations.

In the case of our NC boats credit for having developed this type of seaplane belongs to Rear Admiral David W. Taylor and Comdrs. G. C. Westervelt ['06], H. C. Richardson ['06], and J. C. Hunsaker ['12], Construction Corps, U.S.N., whose important and successful work in aeronautical engineering particularly fitted them for the arduous task of designing the American competitors for the blue ribbon of the Atlantic—which are incidentally the most powerful aerial scouts of the United States Navy.

Although the NC planes (N for Navy, C for Curtiss) are now remembered primarily for their first transatlantic flight, these ships were first planned to overcome and combat the menace of submarine warfare which, in 1917, began to be quite threatening to United States shipping. Details of the design and construction of these planes are recorded in an article "Progress in Naval Aircraft" by Commander J. C. Hunsaker in the July, 1919, issue of the *Journal of the Society of Automotive Engineers*.

Other events related to aviation which transpired during 1919 include the establishment on June 1 of the first forest aerial patrol by the Department of Agriculture, operating out of March Field, Riverside, Calif., and the Travelers Insurance Company of Hartford, Conn., also issued during this year, the first aircraft liability and property insurance policy. During 1919 there originated in Boston, during Boston's police strike, the white lines designating traffic lanes. They

were initially painted on Boylston Street between Tremont Street and Park Square, and were so successful that other cities later adopted this method of regulating traffic.

We break the sequence of events in years ending in 9 to record a few brief events of a quarter century ago when The Review was celebrating its silver anniversary and boasted an editor, managing editor, and assistant managing editor! This was the year in which Cellophane made its appearance and in which—so it is claimed—contact lenses from the Carl Zeiss works in Jena were first imported into this country. Again, however, events in aeronautics formed an important part of the year's highlights in science and engineering. The installation of airway beacon lights made night flying possible for the first time so that on July 1 transcontinental air-mail service (as contrasted to the airplane-train service which had been operating since 1920) became possible between New York and San Francisco. During this year a Round-the-World Flight of the United States Army planes covered 26,103 miles in 175 days, with a flying time of 351 hours, 11 minutes. During this trip, the first transpacific flight was made in May. Also, in 1924, the first transcontinental voyage by lighter-than-air craft was made when the *Shenandoah* left Lakehurst on October 7 and arrived in San Diego, Calif., on October 11.

On December 1, 1924, the Atlantic was spanned in quite another, but equally significant, way when Captain Richard H. Ranger, '11, transmitted pictures by radio from London to New York in a radio picture service, called Photoradiogram, which he established for the Radio Corporation of America. A reproduction of the original photograph to be transmitted officially over the system is shown on this page. It required 20 minutes to transmit the three and a half by five-inch portrait of President Coolidge. In making this illustration available for use by The Review, Mr. Ranger writes: "It was originally sent from London to New York at that time [December 1, 1924]. I should add that it was the first official picture; the boys slipped one over me and the actual first was one of myself, but that naturally was just a test to see what the equipment would do. We all gathered around the instrument on the fifth floor at 66 Broad Street in New York City. A tiny little pen had been made for us by Waterman's which tapped out the dots of the picture on a piece of paper carried by a revolving drum. On the other side of the Atlantic the tapping of the little pen was started by the massive tapping of some six lever switches connecting the 200-kw Alexanderson alternators to the antenna as controlled by the sensitive photo-cell on the photo transmitter."

Shortly after the demonstration of the Ranger system, pictures were transmitted by radio from Washington, D.C., to Boston by C. Francis Jenkins.

Just before all this took place, The Review was celebrating its 25th anniversary. H. E. Lobdell, '17, was editor, ably assisted by Eric F. Hodgins, '22, managing editor, the late Professor Robert E. Rogers, contributing editor, and Raymond Stevens, '17, as business manager. A major portion of the anniversary issue was devoted to the chronicling of events as recorded in

(Concluded on page 188)

Fifty Years

BEFORE THE MASTHEAD

*Upon the Attainment of Its Golden Anniversary,
The Review's Progress for Five Decades Is Recorded*

By H. E. LOBDELL

FIVE days before Christmas of 1898, the first number of *The Technology Review*, a quarterly magazine of octavo format edited by Arthur T. Hopkins, '97,* was published. Chaste in typographical layouts designed by the Colonial Press of C. H. Simonds and Company, the 143 text pages of Volume I, Number 1, dated January, 1899, were printed on Warren's finest rag paper, and wrapped in a chocolate-brown cover — the characteristic "brown pinafore" (as one of Mr. Hopkins' successors called it) which *The Review* was fated not to discard for nearly a quarter of a century. Publicly, however, the initial bow and blush of the "new Review" was delayed 11 days until December 30, at the annual dinner and meeting of the Alumni Association held at the Exchange Club, Boston, with an attendance of about 120. There, when "copies . . . were placed before the members. . . the favorable comment elicited brought gladness and new courage to the hearts of all concerned."

Besides Mr. Hopkins, three other gentlemen were immediately concerned: Professor C. Frank Allen, '72,* James P. Munroe, '82,* and Arthur D. Little, '85,* who constituted the Committee on Publication, a committee be it noted, not of the Alumni Association but of the Association of Class Secretaries. The Alumni Association, organized March 17, 1875, with an initial membership of 122, thereafter held a yearly meeting and dinner and played a part in connection with the Institute's commencement program, but otherwise remained relatively inactive until the formation of the Alumni Council in 1909. The Association of Class Secretaries, on the contrary, from its beginning on November 4, 1896, with a membership of around 30, was the *working body* most active in alumni affairs for the next dozen years.

It was, therefore, to a meeting of the Class Secretaries on February 1, 1897, that Dr. Little broached the "matter of a proposed publication"; whereupon he, together with Messrs. Allen and Munroe, were appointed a committee "to consider . . . and report." Dr. Little, writing 25 years after the event, stated that *The Review* "had its conception in the desire to provide a clearing house for Technology news, a forum for discussion of Technology affairs, and a dignified medium for presentation of those larger interests and problems with which Technology men in their relations to the affairs of the community were particularly concerned. . . . The need and opportunity for a publication of the sort proposed was recognized by the

Committee from the start. Its discussions, therefore, were concerned only with questions relating to the form and character which the publication should take and the means of bringing it into being." Hence, after reporting progress at further meetings in the following October and December, Dr. Little asked permission to go ahead and on May 3, 1898, the Association of Class Secretaries voted unanimously that the committee of which he was chairman,

. . . be and hereby is empowered to proceed and publish the said Review on behalf of this Association, . . . [and] is hereby authorized to engage for one year a suitable editor, at a salary not exceeding \$600 a year, and to expend for the purposes of said publication such amounts as may be received from advertisements and subscriptions. And said Committee is further authorized to borrow, on behalf of this Association, such sums in anticipation of publication not exceeding \$500 . . . as may be necessary.

Consequently, before the end of 1898, with \$1,000 generously advanced by Mrs. William Barton Rogers as a guarantee fund (half being a loan, later repaid), *The Review* was launched by its trio of godparents, two of whom were already notable in Institute annals. Professor Allen in 1875 had been one of the charter members of the Alumni Association, of which he and Mr. Munroe, respectively, had been secretary in 1890–1892 and president in 1894–1896. Moreover, 11 years earlier than 1898, Professor Allen's active span of nearly 40 years on the Faculty in the Department of Civil Engineering had started, and in 1897 Mr. Munroe had commenced the 32 years he was to serve as a life member of the Corporation, of which body he was to become secretary in 1907. As for Dr. Little, his far-sightedness in proposing the establishment of *The Review* betokened the later honors that he would receive, honors such as the presidency of the Alumni Association in 1921–1922 and membership on the Corporation from 1912 until his death in 1935.

Despite its distinguished sponsorship and the welcome accorded its first number, however, subscribers to the fledgling magazine were few in number during 1899, and its advertising revenues were equally scanty. After paying the printer and the papermaker, and the editor's salary, outgo exceeded income to a point that the committee "had to report a deficit of \$1,100" on the operations of Volume I. The situation patently called for retrenchment, and neither the committee nor the editor flinched. Mr. Hopkins yielded the chair to Walter Humphreys, '97, who ed-

* Deceased

THE REVIEW EDITORS

Of Its First Half Century, Arranged in
Order of Their Initial Appearance on Its Masthead

Name	Title	Year and Vol.
*Arthur T. Hopkins, '97	Editor	1899 Vol. I
Walter Humphreys, '97	Editor	1900 Vol. II, No. 1
*James P. Munroe, '82	Editor	1900-1908 Vol. II, No. 2- Vol. X, No. 2
*I. W. Litchfield, '85	Editor	1908-1917 Vol. X, No. 3- Vol. XIX, No. 5
*Walter B. Snow, '82	Adv. Mgr.	1914-1922
*Robert E. Rogers	Editor	1917-1922 Vol. XIX, No. 6-Vol. XXIV, No. 3;
	Contrib. Editor	1922-1928
H. E. Lobdell, '17	Editor	1922-1930 Vol. XXV, No. 1-Vol. XXXII, No. 8; 1930-
Eric F. Hodgins, '22	Publisher	1922-1927
Raymond Stevens, '17	Managing Editor	1923-1924
John E. Burchard, '23	Adv. Mgr.	1924-1925;
	Asst. Editor	1933-1943
	Editorial Asso.	1924-1925
*Richard W. Kenison, '24	Adv. Mgr.	1925-1932;
J. J. Rowlands	Contrib. Editor	1932-
	Editorial Asso.	1926-1927;
James R. Killian, Jr., '26	Asst. Mng. Editor	1927-1930;
	Mng. Editor	1930-1939 Vol. XXXIII, No. 1-Vol. XLI, No. 3;
	Editor	1939-
John D. Crawford, '27	Editorial Asso.	1927-1929
Ralph T. Jope, '28	Asst. Mng. Editor	1928-1929;
	Circ. Mgr.	1929-
Tenney L. Davis, '13	Bus. Mgr.	1933-1941; 1946-1948
Philip M. Morse	Editorial Asso.	1936-1947
Frederick G. Fassett, Jr.	Editorial Asso.	1937-1939;
	Editor	1939-1945 Vol. XLI, No. 4-Vol. XLVII, No. 8;
	Editorial Asso.	1945-1946
Paul Cohen, '35	Editorial Asso.	1938-
Edward R. Schwarz, '23	Editorial Asso.	1942-1947
Willy Ley	Editorial Asso.	1944-
Frederic W. Nordsiek, '31	Editorial Asso.	1944-
David O. Woodbury, '21	Editorial Asso.	1944-
B. Dudley, '35	Editor	1945-Vol. XLVII, No. 9-

* Deceased

ited Volume II, Number 1, at a reduced salary, and then Mr. Munroe became The Review's third editor, his tenure lasting through nearly nine years — all without salary.

"I am appalled," Mr. Munroe reminisced in The Review's Silver Anniversary number of January, 1924, "at my hardihood in undertaking the combined offices of stepfather, nurse, 'professor' of deportment to The Review. I adopted the waif at the age of one, when it was moribund from financial starvation, and, with little experience and less leisure, agreed to provide for it a makeshift home in my business office. This was on the dubious supposition that translation from the academic groves of Newbury Street to the harsh atmos-

phere of trade might keep the poor thing alive. In . . . that second volume, the editorial page — which, as the English say, 'was me' — entered an alibi by protesting that 'no child is interesting till it is three years old,' believing, of course, that the anaemic orphan would be off my hands ere then. Mark Twain (or was it Bret Harte?) defined a mining camp gentleman as one who 'never shook his mother.' Perhaps it was kindred hyper-delicacy that postponed my 'shaking' The Review till it was nearly ten years old."

Of Dignified Tone

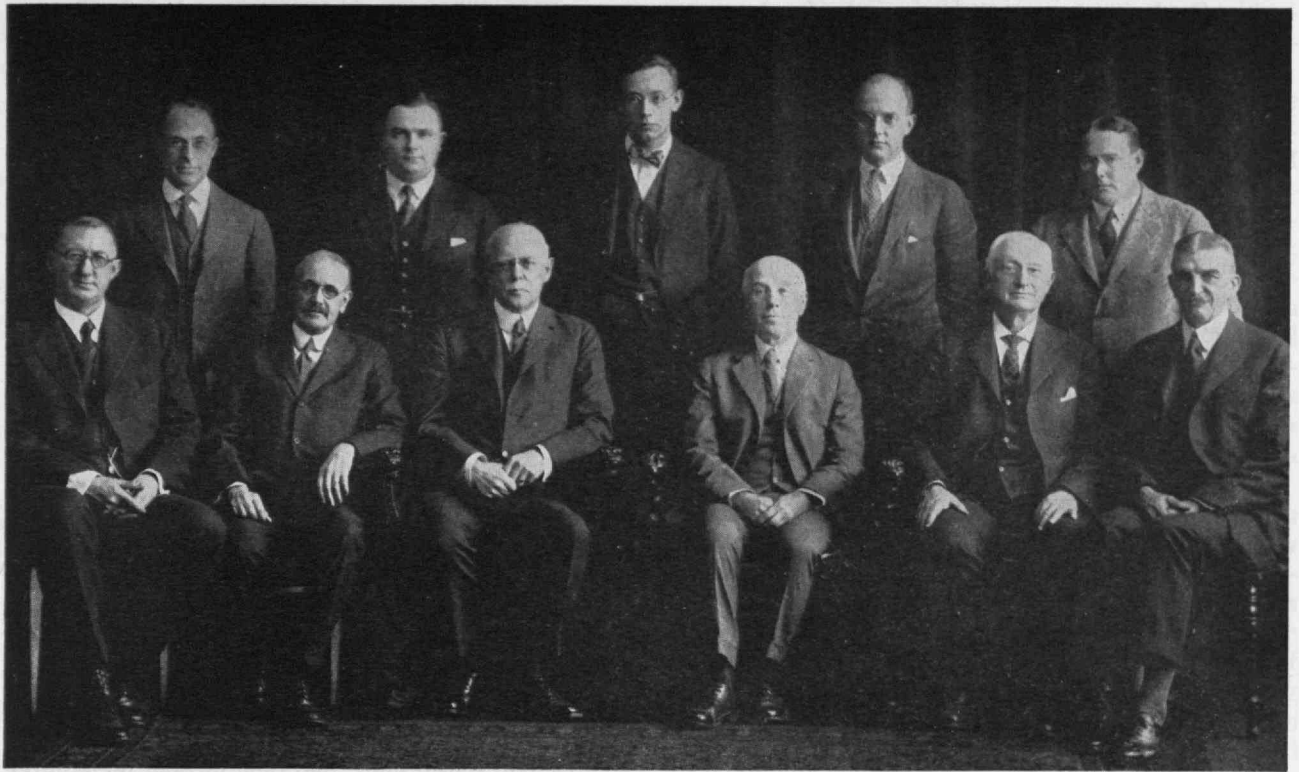
To look back upon his editorship in such fashion was characteristic of Mr. Munroe's quizzical modesty (as well as of the potentialities of his deft and facile pen), even as it was for him to re-emphasize the "unflagging aid of his colleagues on the Committee on Publication: Allen, '72,* [Walter B.] Snow, '82,* Little, '85,* [Arthur A.] Noyes, '86,* [Leonard] Metcalf, '92,* and Humphreys, '97." Yet it was Mr. Munroe himself, and much more so than any other single individual, who earned for this magazine the prestige and respect it commanded from its alumni audience during that formative first decade. To be sure, in that decade the audience was not large numerically, for up to 1900 the Institute had granted less than 2,200 degrees, but during Mr. Munroe's tenure the subscription list grew from less than 1,000 to over 1,500 — to be exact, 1,607 for Volume X in 1908.

As a "clearing house for Technology news, a forum for the discussion of Technology affairs," The Review's tone in those days was uniformly sober, serious, and dignified, as befitted a period of great crisis. For at the opening of the Twentieth Century, the Institute was "face to face with stubborn facts which cried for removal" from the Back Bay to a new site; and confronted by a despairing lack of funds not only for that purpose but to preserve its actual independence against a threatened "Merger" with Harvard University. Mr. Munroe recalled:

The one never-forgotten objective of The Review was, however, to do its full share in welding past and present students into a militant organization eager to work wholeheartedly for the Institute's upbuilding along the lines so clearly laid down by its founder, Rogers, and its preserver, Walker. Essential to this development were, on the material side, absolute independence, and, on the intellectual side, that breadth of view and that roundness of training which are so inadequately expressed by the word "culture."

Fortunately — though the Merger seemed at the time a genuine disaster — the nebulous good-will of the Alumni was shocked into dynamic action, in the winter of 1903-1904, by persistent rumors of impending marriage with Harvard University. Such a cure for Technology's chronic poverty had been many times suggested and, in 1878, when the Institute was in almost desperate straits, had come within an ace of acceptance. It had been tentatively broached again in 1898, soon after President Walker's death; and the establishing of the Association of Class Secretaries and The Review had been not a little hastened thereby. Not, however, until that magazine was nearly five years old, did the wooing of Harvard become active, and therefore serious. . . .

* Deceased



Notman

This photograph which originally appeared in The Review's 25th anniversary number of January, 1924, brought together those who had a hand in the founding of The Review or in its administration during its first quarter-century of publication. Seated, in reading order, are: Arthur T. Hopkins, '97, first editor; Walter B. Snow, '82, in charge of advertising in The Review's early days; Arthur D. Little, '85, chairman of the Committee on Publication which brought The Review into being; James P. Munroe, '82, third editor, and member of the Committee on Publication; C. Frank Allen, '72, third member of the Committee on Publication; and I. W. Litchfield, '85, The Review's fourth editor. Last living member of this group was Mr. Allen who had promised to prepare a manuscript for inclusion in this issue a few weeks before his death last June. Standing, left to right, are: Walter Humphreys, '97, second editor, and Secretary-Treasurer of the Alumni Association for more than 16 years, and now Secretary-Treasurer of the National Association of Wool Manufacturers; H. E. Lobdell, '17, sixth editor, from 1922-1930, and now The Review's publisher, in addition to his position as executive vice-president of the Alumni Association; Eric F. Hodgins, '22, managing editor, 1922-1927, who is now a member of the board of editors of Fortune; Raymond Stevens, '17, advertising manager, 1923-1924, President of the Alumni Association, 1944-1945, and now director of Arthur D. Little, Inc.; and Professor Robert E. Rogers, fifth editor, and, until his death in 1941, Professor of English at the Institute.

Volumes VI and VII, when the Merger pot was boiling, were the banner years of this particular editorial service. Verbal ammunition was pouring in from all sides; the Corporation, which showed a substantial majority in favor of an alliance; the Faculty, which showed an overwhelming majority against; and the Alumni and undergraduates who, whatever their legal rights, or want of rights, insisted upon being heard — all these crowded into the narrow confines of The Review with every sort of argument. . . . The Review took just pride in the acknowledged fact that in this furious *melée* it kept the controversial rudder true, gave equal space to friend and foe, and never tried, by suppression or innuendo or personal sneer, to turn the scale either way. So, while the Merger fight made many an honorable wound, it left no festering sores of personal bitterness. The champions on either side found their respect for their opponents strengthened by the mutual drubbing; and, after the smoke of battle had lifted, all of them discovered, what only a few up to that time appreciated, that the Institute of Technology is a most precious possession, well worth fighting for, well worth working for, and needing only adequate endowment, an ample location, and Alumni as devoted as the school's self-sacrificing Faculty, to become in actuality what Rogers and Walker had visioned it in splendid prophecy.

Mounting Interest

By 1908, there were twice as many graduates and former students as there had been 10 years earlier, but

the mounting intensification of interest by the Alumni in the Institute's destiny during the first decade of the 1900's was not to be measured by sheer increase of numbers. The diligence of the members of the Association of Class Secretaries, collectively and individually, had successfully fostered many endeavors in addition to The Review, such as the All-Technology Reunion of 1904, obtaining subscriptions which totaled \$100,000 toward a future Walker Memorial, and promoting the activity of local associations (today known as M.I.T. Clubs) of which there were then 21 distributed across the country.* When Walter B. Snow, '82, a prime mover in organizing the Association of Class Secretaries, became president of the Alumni Association in 1908, it was, therefore, but natural that he advocated appointment of a joint committee to study how the effectiveness of the existing relationships between those two bodies might be improved. By then, too, most surviving factional differences over the Merger question (save as footnotes to an interlude in Institute history) were displaced by enthusiasm over

* Chicago (formed in 1887), Denver (1889), New York and Springfield (1895), Philadelphia (1897), Buffalo (1898), Pittsburgh and Washington (1899), Cincinnati and Lawrence-Lowell (1901), New Bedford (1904), Hartford (1905), Cleveland (1906), Harrisburg, Los Angeles, New Orleans, San Francisco and Syracuse (1907), Detroit, Portland (Oregon), and Seattle (1908).

the impending inauguration of Richard C. Maclaurin, during whose administration increasing reliance would clearly be placed upon support from the Institute's Alumni.

As a consequence of recommendations submitted by Mr. Snow's joint committee, in December, 1908, the Alumni Association adopted a new constitution by a vote of 659 to 3, and this document provided for an Alumni Council composed as follows: the officers and Executive Committee; and the secretary of, or a representative from, each graduate class and each local association. The Alumni Council, which held its organization meeting on May 12, 1909, immediately became the *working body* most active in alumni affairs, in succession to the Association of Class Secretaries.

Coincidentally, management of The Review passed to the Alumni Association at the end of 1908, and in the previous summer Mr. Munroe obtained his long-sought and well-merited relief, being succeeded by I. W. Litchfield, '85.* In addition to the appreciation of Mr. Munroe's editorial achievements already noted, it is worthy of record that he wiped out the \$1,100 deficit on Volume I and repaid the loan advanced by Mrs. Rogers within two years, and then carried on so skillfully that The Review's net final deficit accruing to the Association of Class Secretaries in 1908 amounted to only \$106.53. No wonder the Class Secretaries tendered an elaborate dinner in Mr. Munroe's honor and, as he phrased it, "poured into his ears golden and silver speeches of which he was most unworthy; and showered him with a superb silver service which is his most treasured possession, and with gold for books to an extent he never before had seen."

Under New Management

As The Review's fourth editor, from 1908 to 1917, Mr. Litchfield received a modest annual honorarium, but he was by no means a full-time editor. During those years he was also field manager of the Alumni Association and the number of local associations increased from 21 to 52; and on him fell main responsibility for organizing the All-Technology Reunions of 1909 and 1916. It was truly a fabulous era for the Institute, an era ushered in by a gift of \$500,000 toward a new site from Coleman du Pont, '84* followed by Dr. Maclaurin's announcement that a "mysterious Mr. Smith" had provided \$2,500,000 for new buildings, and climaxed at the Dedication Reunion of the "New Technology" in June, 1916, by gifts totaling another million from eight Alumni — \$500,000 from Pierre S. du Pont, '90; \$100,000 apiece from three other du Ponts (Coleman, '84,* Irene, '97, and Lamont, '01), and from Charles Hayden, '90;* \$50,000 from Edward D. Adams, '69,* and \$50,000 jointly from Charles A. Stone, '88,* and Edwin S. Webster, '88.

To keep abreast of the never ceasing succession of newsworthy events, Mr. Litchfield persuaded the Executive Committee of the Alumni Association during 1911-1917 to supplement the regular quarterly issues of The Review by publishing each year five "thinner in-between numbers." In this way, he managed especially to post his readers more promptly with the unfolding plans for and construction progress on the

* Deceased

SUMMARY OF REVIEW CIRCULATION AND ADVERTISING

(Averages by Five-Year Periods)

Volumes	Years	Net Paid Circulation	Gross Advertising	Profit or Loss
I-V	1899-1903	1,123	\$ 1,575	\$ 54
VI-X	1904-1908	1,401	1,335	75°
XI-XV	1909-1913	3,068	2,446	602°
XVI-XX	1914-1918	3,718	2,893	1,099°
XXI-XXV	1919-1923	5,781	4,703	279°
XXVI-XXX	1923-1928	7,089	10,451	2,868
XXXI-XXXV	1928-1933	8,187	13,583	5,655
XXXVI-XL	1933-1938	7,843	12,765	3,502
XLI-XLV	1938-1943	9,897	16,012	5,409
XLVI-L	1943-1948	11,434	34,666	7,553

° Loss.

new site. Meanwhile, The Review gained readers, and for Volumes XI to XIX the average net paid circulation rose to 3,288; while the average annual gross advertising likewise doubled, to \$2,644 for the period 1909-1917 — thanks largely to Mr. Snow who formally became The Review's advertising manager in 1914. And, although production costs rose at a faster rate than did receipts from circulation and advertising, so that the magazine showed an operating loss in each of the nine years save one, the Executive Committee paid the accumulated net deficit, amounting to \$8,444 for the period, without complaint in recognition of the fact that the editor had so markedly expanded the size of its alumni audience.

In the late spring of 1917, Mr. Litchfield left for Washington to become associated in the classification of personnel for war industries, a problem which, though lesser in its magnitude than during World War II, was no less pressing or complex when the unprepared United States declared war upon the Central Powers. Succeeding Mr. Litchfield as The Review's fifth editor, from 1917 to 1922, Professor Robert E. Rogers, of the Department of English and History, was pressed into the breach because, in his own words, he had "been imprudent enough, the July before, to write almost the entire record of the Dedication Reunion. And when the war came it was held against me. . . . For Litchfield the magazine had been a useful means of working up enthusiasm for the things the Alumni were doing, the chief instrument in getting the Alumni behind such vast projects as the Dedication Reunion. I had no such responsibilities or opportunities. My job, as I saw it . . . was to cram into The Review quarter by quarter, every shred of information I could lay my hands on which concerned Technology and would interest Technology men. The result was, I am inclined to grant, a scrapbook, but an extraordinarily rich scrapbook."

Following the armistice of 1918, with the attention of more and more Alumni focused on the Institute because of the Educational Endowment Fund campaign of 1919-1920, as a climax to which the identity of "Mr. Smith" as George Eastman was disclosed, The Review's audience rose to newer levels. During Volumes XX-XXIV (1918-1922), which Professor Rogers edited, the average paid circulation rose to

HALF A CENTURY'S PROFIT AND LOSS SUMMARY

Volumes	Years	Period of Profit or Loss		Net Total
			Amount	
I-X ¹ (40 numbers)	1899-1906	4 years	\$ 1,975°	
		6 years	1,868	\$ 107°
XI-XXIV ² (90 numbers)	1909-1922	13 years	11,791°	
		1 year	419	11,372°
XXV-L ³ (226 numbers)	1922-1948	26 years	125,911	
		0 years	—°	125,911
Total for the Half Century				
I-L (356 numbers)	1899-1948	33 years	128,198	
		17 years	13,766°	114,432

¹ As a quarterly under the Association of Class Secretaries.

² As a quarterly under the Alumni Association — with supplementary in-between numbers during 1911-1917.

³ As a monthly under the Alumni Association.

° Loss.

5,418, and the average yearly income obtained by Mr. Snow from advertising climbed to \$3,327. Nevertheless, for each of these five years, the Alumni Association's Committee on Publication was obliged to report an operating loss, the total of these for the period being the amount of \$2,928.

Professor Rogers always considered himself an appointee *ad interim*, and had "long urged that a quarterly could no longer take care of the news of Technology and its Alumni. The issues were full to bursting already. What was needed was a monthly . . . full-time men at work upon it, a business manager and an advertising manager, and a policy. . . ." Finally, Professor Rogers' counsels prevailed in the spring of 1922 — when by one of those coincidences of the record, the chairman of the Committee on Publication was the same Arthur T. Hopkins, '97,* who had been The Review's first editor, back in 1899.

At this juncture, Mr. Hopkins invited me to become The Review's sixth editor, which offer I accepted; and on my own behalf, I invited two members of the then Senior Class of 1922, Eric F. Hodgins and Albert J. Browning,* respectively, to become associated in the transformation of the editorial and business phases of the magazine from a quarterly into a publication appearing monthly throughout the academic year. Presumably, Mr. Hopkins turned to me on account of my having been general manager of *The Tech* during 1916-1917 rather than because of my prewar exposure to the study of architecture, or because in 1921 I had been appointed assistant dean; and certainly, Eric Hodgins, who accepted my offer, knew that in making it I was much more impressed by the talent he currently displayed as editor of *Voo Doo* than by whatever acquaintance I supposed he might have acquired with chemical engineering during his undergraduate passage along the route of Course X. Al Browning, by contrast, was more balanced in his background than either of us, for he was general manager of *The Tech* and on the verge of graduation from Course XV; and perhaps it was this combination of qualifications which prompted him to decline my invitation and embark directly on his notably successful career in industry — a career climaxed by his wearing a star in World War II during which he was director of pur-

* Deceased

chases for the Army, and afterward with the Ford Motor Company, of which he was vice-president and director of purchases when fatally stricken last spring.

Dated November, 1922, the first number of Volume XXV, therefore, appeared, with Eric Hodgins as managing editor, aided and abetted by such help as I could provide — in a new format, 9 inches by 12 instead of octavo, numerous illustrations being intermixed with its text — and with a new style of cover. Concurrently, in the autumn of 1922, all extant examples of the "brown pinafore" The Review had worn from Volume I through Volume XXIV were relegated to the garret, that is to say, they were removed to storage in the rotunda between the inner and outer domes of Building 10, that void where unclassified remnants of Institute memorabilia are permitted to acquire a dusty patina.

From the start, the revamped Review appealed to its readers, generally speaking, or else they silently accepted what was; but there were those who dubiously wagged their heads. To these latter, the changes epitomized the uncertainties they felt about the younger generation in that jazzy Coolidgean epoch of prosperity and prohibition, which a then blossoming novelist fancifully labeled The Plastic Age. So, certain reactionary readers were self-convinced they missed the old outer garment, a few were irked because the old octavo size better fitted their bookshelves, and others winced every now and then, and not without reason, at what they read. For, while the new editors were ever mindful that the traditional dignity of The Review must be jealously guarded, and they were ever wishful to continue to enjoy the respect of their subscribers, yet, it can be publicly admitted in hindsight, they were anxious not only that what they wrote be read but that it be talked about.

Review Revamped

Hence, columns of The Review at times tended to stress the more vivacious aspects of what was being reported, which upon occasion led to the accusation that The Review was saucy rather than sprightly. But is there today a reader of The Review of the early 1920's — one, for example, still able to sit up and take nourishment in 1949 — who will not relish being reminded of how the managing editor "did" the annual dinners in New York or Boston? Or, of some of his editorials, or of the zest with which he pin-pointed "the oratorical triumph of the evening" in publicizing the monthly deliberations of the staid and august Alumni Council? [And, Eric, can you not still relish the anguished remonstrances of the Council member you turpented in unbold Bodoni (or was it Caslon?) for larding his remarks with insinuations that everybody present be sure and call him the next day on his telephone, the number of which I can still hear him saying was "Congress 635"?] In the main, though, the changed Review quickly caught on with its audience, which crossed the 7,000-mark within two years, and soared to over 8,000 net paid within another five. And the Executive Committee of the Alumni Association, in time becoming accustomed to a succession of annual operating profits instead of deficits, happily dissolved the Committee on Publication and left the editors to fend for themselves as best they could.



Bachrach

James R. Killian, Jr., '26
Editor of *The Review*, 1930-1939

Surely, no titular editor of *The Review*, such as I was in the 1920's, could truly deserve being blessed by such able managing editors as Eric Hodgins (to whom *Fortune* was then just another magazine, and who had yet to meet Mr. Blandings and for him to build his dream house) or James R. Killian, Jr., '26 (who then never dreamed where he would wind up in 1948). Nor by steadfast encouragement from a contributing editor such as John J. Rowlands (recently from the United Press, but then not aware he would years later draw upon experiences of his earlier youth to write *Cache Lake Country*). Nor, by having on the business side such colleagues as Raymond Stevens, '17, who, in the brief months he stayed, made it necessary first to use five figures in reckoning a volume's advertising gross (and who then did not dream he would ever be president of the Alumni Association, which he did become in 1944-1945) and Ralph T. Jope, '28, who joined *The Review* fresh from Course XV and absolutely confident that in some future year it would carry \$20,000 of advertising (though then not even he did dream he would sell over \$36,000 worth of space in each of the last three years of *The Review's* first half century).

Golden Age

Increasingly after I was appointed dean of students, it appeared more consonant with reality that Mr. Killian become *The Review's* seventh editor without further delay, I being denoted thereafter on the masthead as publisher; and this shift took place at the end of Volume XXXII in July, 1930. It was under Mr. Killian's editorship that the truly golden age of the modern *Review* began, through extending the purview of its columns to embrace material relating generally to the unfolding march of progress in science and technology, as well as to accomplishments within the confines of the Institute and achievements by its Alumni. After Mr. Killian became Dr. Compton's principal colleague this broadened editorial policy was main-

Shown here are past editors of *The Review* whose blue-penciling activities postdate the taking of the photograph on page 157.

In 1930, Dr. Killian succeeded Editor Lobdell as wearer of the editorial mantle. *The Review's* loss of its seventh editor was the Administration's gain when Dr. Killian became executive assistant to the president in 1939, and, last October, president of M.I.T.

Frederick G. Fassett, Jr. spent many youthful days in the plant of Maine's Waterville Sentinel before becoming *The Review's* eighth editor. He became director of the Office of Publications and Public Relations, Carnegie Institution of Washington in 1945.



Bachrach

Frederick G. Fassett, Jr.
Editor of *The Review*, 1939-1945

tained and further enriched by his two successors: Professor Frederick G. Fassett, Jr., of the Department of English and History, the eighth editor, from 1939 to 1945, when he departed for Washington to become reassociated with Vannevar Bush, '16; and B. Dudley, '35, the ninth editor, who came in 1945 from the McGraw-Hill publication, *Electronics*.

Under each of these three editors, the third clause of the original "conception," which Dr. Little and his Committee on Publication had for *The Review* back in 1899, was thus realized: namely, that it serve also as "a dignified medium for presentation of those larger interests and problems with which Technology men in their relations to the affairs of the community are particularly concerned." And, parenthetically, each of these three while in the chair enjoyed that experience very dear to an editor's heart: namely, mounting "reader interest" tangibly expressed by the circulation curve breaking into new realms, by its passing the 9,000 mark for Mr. Killian and the 10- and 11,000 marks, respectively, for Messrs. Fassett and Dudley.

In Mr. Killian's time, though his nine-year span included the depths of the depression, the pages of *The Review*, always on the choicest of heavy-coated paper, invariably betrayed a splendor and felicity of layout and illustration hitherto unknown. To be sure, during the worst of it, despite all that Mr. Jope could do, revenues did dip downward, but never was the editor obliged to curtail to a degree incommensurate with his artistic taste, nor with the higher standards he was establishing for the magazine's textual content. Professor Fassett could, and did, carry forward *The Review's* already improved editorial stature, but he was perforce obliged to forego a corresponding embellishment of his columns by such sizable half-tones or lavish typographical treatment. In his time, he was confronted by a war rather than a depression: the handsome plate paper was no longer obtainable, and in the

(Concluded on page 184)

Gravel

By F. G. FASSETT, JR.

THIS day we have been hauling gravel —
Ten tons loaded, moved, and placed —
Ten tons of the rocky bones of earth
Shoveled up, transported, dumped a half-score miles away,
Once more to settle, pack down, find a level.

Indeed, our need is for no Archimedes
To calculate disturbance in the planet's orbit
Occasioned by this microcosmic cataclysm.
What is Earth's weight?
Against it to balance one hundred ton-miles
Of transfer mocks beyond triviality.
Ten tons, ten miles, loaded, hauled, and placed:
No nebulae will unroll in marvel spirals,
No Joshua's deed was this, to halt the sun,
Or even by a microsecond alter the universal round.
But in such terms as these we are not held to deal.

When fog still floated coldly light along the lake,
In the raucous truck with a roar we rocketed
Down the road from the woods, and across the town,
Into the rising sun from the river, between fields
Still damp, past houses still bright from night's clean air,
With a bang down the pitch, with a clash across the ledge,
While the idle shovels clattered and crashed
In the empty body behind us, and an early cow
Stared in exasperation from pasture's moisture,
And an early man was a round mouth.

White ruts between white-daisied green
Across the flat meadow, then sudden up.
Twist on the bend, with off wheels grabbing for a hold,
Then down, plunge, rattle, slat, and plunge,
So into the pit, into the heart of the hollow hill,
Damp yet, and dark, where night still brimmed to the full.
No one there before us — no one? Here, a sometime wheel,
Hub, random spokes, a broken fellow;
There, rusty iron and gravel-grey wood, what once was
a shovel;
And everywhere the crisscrossed tracks of others' wheels —
And back of them in time, how many more,
Whose once hot sweat long since has sunk
Far, far beneath the pit's cold floor
Even as their bones are settling in the earth
Of burying grounds in every quarter of the town.

But none was there.

First comers, first choosers in that chill Venusberg
That day, and so we singled out
A rich part of the tapered gravel wall
Rising sheer from the floor, to which the truck
Could be close snugged. We backed and filled,
And eased up to the bank, ready to mine a load.

Far up above, the sky rested like a blue-lined lid
Flat across the pit's high crest from rim to rim,
Trapping us upon the floor of rock and sand,
With but the circling wall,
Shell of the hollow hill, to hold the sky
From crushing us beneath.

It took a kingfisher to end that notion,
Rising from jagged black lines that were a dead birch stub
Slanting on the high pit's topmost rim,
Rising against the blue, driving the blue
Upward before him with a dry rattling cry
As he went to warn the river that men were at their
work again.

Now a man's heart sings
When his shovel rings
As its load on the truck floor crashes
And the blade he swings
And a new bite flings
Till the rock like water splashes.

And so it was as we filled her up, up to the limit
And beyond, and with a grind of gears pulled away
Across the town, down through the woods, to place the load
Where it was needed, and clatter back through morning
dust
To find the hollow hill already tilted
Like a cup and pouring its cool darkness out
While hot light slipped down the western wall,
Discovering again the mass calendrical,
Horizon on horizon piled,
Enforcing order and inheritance
Upon the random stony billions.

Rock that ring on my shovel-blade,
Where is thy brother? In what far heap
Ten thousand score years since fell he as the
slow ice
Ground over the bare planet's frame?
Now what a mill was that!
Mountains themselves for the nether stone,
Ten billion billion tons of thunderous frost for the
upper,
And a grist of grit-grained granite ground between —
Cliff to crag to boulder to cobble to pebble to gravel
to sand to dust,
And the trapped torrents twisting in hidden ways
beneath,
And the ridges growing in the cold cramped dark,
And the lone boulders stranger than pine cones
Lost on a treeless desert of mountains.
(Rock, where is thy brother?
Man, where is thine?)
O glaciers of thought through aeons of years
Grinding over the rough mind of man
In flow imperceptible and vast,
And the hidden floods beneath,
Sweeping heaped ridges of words,
And now only the massive moraines of memory
Bearing witness, bearing witness in the mixed won-
der of words
To cragged peaks and breathless precipices that
were,
To the drummed roll of the vast crushing weight of
thought grinding over crude roughnesses of mind
Grinding, grinding it down to drumlin smooth.
(Word, where is thy brother?
Man, where is thine?)

(Continued on page 186)

IN opening this discussion of M.I.T.'s Development Program, I wish first of all to express the deep appreciation of my colleagues and myself that nearly 300 of you have taken time out of your busy programs to confer with us during this two-day session. Certainly it is heartening to me, as I undertake the responsibilities of the Institute's presidency, to have this impressive demonstration of interest in the Massachusetts Institute of Technology.

Last September, when I was debating whether I should accept and was qualified to accept the invitation of the Executive Committee that I become president of this great institution, two considerations were controlling: The first was that I would share the Institute's administrative responsibilities with Dr. Comp-ton. I was proud to continue to work with him for the advancement of M.I.T. and reassured by the fact that we were to continue to have his inspiring leadership. The second factor was my faith in the Institute's mission and in its future. I could imagine no greater opportunity for public service on my part than sharing in the continuing development of M.I.T. as one of the great educational institutions of the world.

As we begin our discussions of Institute needs, I am encouraged to feel that enthusiasm for M.I.T.'s Development Program is contagious and commanding. Certainly the plans set forth by the Corporation have stirred us here in Cambridge. Why?

Because they are big plans. The late architect and planner, Daniel H. Burnham, once charged his colleagues to "make no little plans; they have no magic to stir men's blood . . . Make big plans; aim high in hope and work, remembering that a noble, logical diagram . . . will be a living thing, asserting itself with ever growing insistency . . ."

Technology Review Photo



Funding M.I.T.'s Independence

I am sure that you will agree that our Development Program is no little plan. We believe that it is a carefully considered one, a logical diagram that asserts itself with ever growing insistency. It is a diagram of the new facilities and increased resources which the Institute must have if it is to realize its full potential.

How did this Development Program come into being? It started with a study by Administration and Faculty of ways in which the Institute could rebuild its program after World War II, could capitalize on new fields opened up during the war, and could refine and strengthen its over-all educational program. A list of high-priority projects was presented to the Corporation a year ago, and the Corporation responded by appointing a Survey Committee to make a study of the Institute's financial resources and of the tentative list of priority needs which had been presented to the Corporation. Under the chairmanship of John R. Macomber, '97, this committee went to work with great energy, and within three months had completed a report recommending that the Corporation organize to raise \$20,000,000 and outlining what the organization should be. The committee informally made two additional recommendations: that we should have an honorary chairman and a chairman of the proposed Committee on Financing Development; and that the right men to fill these important posts were Alfred P. Sloan, Jr., '95, and Marshall B. Dalton, '15, respectively. The acceptance of these two men, Mr. Macomber has remarked, was the most important achievement of the committee, and I certainly agree. We have superlative leadership for the task ahead.

This manifested itself very promptly by the successful response to Mr. Dalton's invitations to men to serve on the Steering Committee and by the willingness of Professor William L. Campbell, '15, to accept the post of full-time executive director and of Ralph T. Jope, '28, to assist him. Throughout these various moves to form our organization, we have had the wise services of Joseph J. Snyder, 2-44, Assistant Treasurer, who joined the Institute's Administration at the end of World War II and took as his first major assignment the task of increasing M.I.T. resources.

Next came the formation of the Committee on Financing Development, one of the recommendations of Mr. Macomber's committee. More than 600 have accepted membership on this committee, a response that augurs well for the success of the Development Program. We have crossed the first big hurdle. We have the men to do the job. We have leadership of the highest order, and we have the loyal support of a wide-ranging group of friends and Alumni.

And now, what is the job? What are the opportunities and new conditions which create the need for

Resources to Effect Program of Advanced Learning Free from External Domination Held Need of Educational Institutions

By JAMES R. KILLIAN, JR.

\$20,000,000? Let me outline some of the educational objectives and necessities which underlie the planning of the special projects. Our need for \$10,000,000 for new buildings and equipment and for \$10,000,000 for capital funds rests on the following five imperatives:

(1) *We must insure and stabilize an adequate salary scale for our Faculty.* We can't expect in the long run to maintain a first-team Faculty on second-rate salaries. Despite a number of increases since 1945, our Faculty salaries are still lagging behind the rise in the cost of living. Since 1939, the Consumers Price Index has risen more than 70 per cent, while the annual "take-home" of our staff has risen only 60 per cent. This latter figure would be lower still had not our Executive Committee authorized selective increases this fall in the face of an operating deficit this year, and with the realization that we must find new income in future years to cover the increase.

While this last increase has put us in a fairly strong position relative to all but a few educational institutions, we must insure its continuance and provide for still further improvement, if necessary. I would hope that M.I.T. might finally have a salary scale for which it need make no apologies.

(2) *We must broaden our educational program and provide a well-rounded and complete college community.* While M.I.T. is first and last an institution devoted to science, engineering, and architecture, it has always felt the importance of providing its students with the general education that vitalizes professional training. Throughout the Institute, there is agreement that M.I.T.'s objective is to educate outstanding engineers, scientists, and architects who may become first-class citizens, who have the breadth, understanding, and public spirit to be leaders in their professions, their neighborhoods, and the nation.

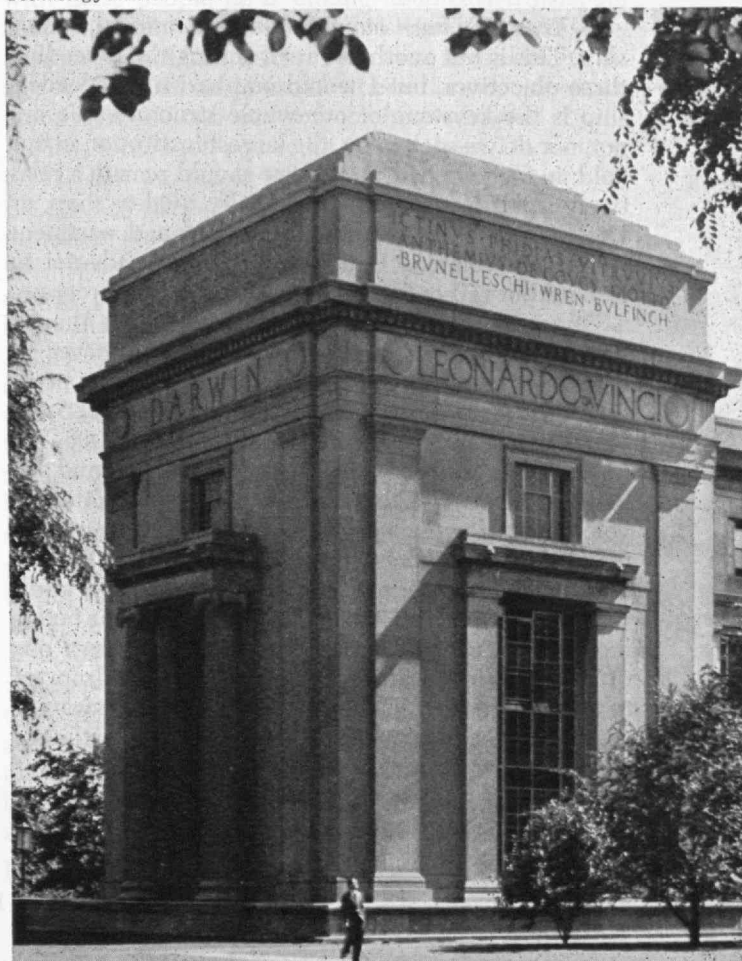
Recent years have witnessed at the Institute a marked development, both in emphasis and in extent, of work in the humanities and the social sciences, including economics, labor relations, and international relations. The results are impressive enough to demand that we go farther, and our Faculty has a well-considered plan for doing so.

We believe that we are at a point where a great forward step can be made in professional education by the development at the Institute of a "fourth estate," which will provide for the humanities and the social sciences in a thoroughly adequate way, and place them in a proper relationship to professional subjects. Given proper support in this field, the Institute can pioneer in giving a new dimension to scientific and engineering training, and the ideas developed by our Faculty, if implemented by adequate funds, can influence engineering education in this country greatly.

Let me mention one aspect of this broadened program which is of practical importance to industry. Industry more and more is looking to institutions such as M.I.T. for potential leaders, for the men who must be the managers, the industrial leaders of tomorrow. Graduates of engineering schools often enter industry through a specialized technical channel, with the result that only those few individuals with superior natural endowments rise to top-level posts in management. Industry, because of sound organizational requirements, must insist on specialization among its young scientists and engineers, and is therefore handicapped in increasing the quantity of potential leaders at a time when they are at an impressionable age. When technical education is too narrow, it tends to restrict the supply and development of leaders. By further broadening its teaching program, M.I.T. has an opportunity to contribute to the solution of this problem, so essential to the management of our highly technical private-enterprise system.

Part and parcel of this program for broadening technological education is the provision of more adequate living and recreational facilities. Education is to be found not only in the classroom and laboratory but in the experience of living with one's fellows in an environment stimulating to intellectual activity and conducive to the development of community responsibility. We want to develop an environment at M.I.T. which performs in the broadest sense an educational function itself, not in a passive way but in a dynamic way. The whole complex of living conditions, activities, and atmosphere must be skillfully arranged to provide the kind of environment that contributes to the development of leadership, breadth, and standards of taste and judgment among our students. These

Technology Review Photo



considerations led the Corporation last year to approve the following statement of policy proposed by its Committee on Student Activity:

Resolved. That it is in the interests of a sound educational program at M.I.T. to provide: (a) Dormitories adequate to accommodate the maximum number of students consistent with the housing needs of the student body and a stabilized enrollment at the Institute. (b) Athletic and recreational facilities adequate to accommodate all reasonable needs of student and faculty members who may wish to use them and to permit intercollegiate competition. (c) Facilities adequate for the conduct of extracurricular activities. (d) Administrative personnel adequate for the guidance and encouragement of student activities and athletics and of a balanced extracurricular program for the student body.

It is one of the objectives of our Development Program to provide the funds to carry out this statement of policy.

(3) *Next, we must accept our proper share of the responsibility for making America pre-eminent in science.* Before World War II a majority of the fundamental advances in science came from Europe, while we were content largely to apply and develop these fundamental concepts. America itself must now develop the men who can make fundamental, creative contributions, and we must find the educational means for doing so. M.I.T. for its part must maintain a Faculty of great men, the best who can be found, and must provide them and their students with an environment in which scientific greatness flourishes. Enthusiasm, morale, stimulating associations, academic freedom, and teamwork we have in exceptional measure. But appropriate facilities, both scientific and social, are basic necessities.

(4) *Next, we must maintain our educational leadership.* This is but another way of stating the preceding three objectives, but I would emphasize that leadership is the keystone of our whole structure. We are not, nor do we seek to be, the largest institution in our field; in fact, we believe that we should remain a relatively small institution — a specialty quality shop, as Dr. Compton has remarked, and not a department store. We seek new buildings and new funds not to expand but rather to deepen and enrich our program.

Of course, our student body is now larger than it was before the war, and we shall probably never go back to our prewar size, but we are nevertheless cutting back our postwar enrollment from a high of 5,660 students to a stabilized number of less than 5,000. We believe that the permanently increased demand for higher education in this country, coupled with the development of new fields at the Institute, warrants our maintaining a student body larger than that before the war. This means, however, that we need additional space. In 1940, we had in our permanent buildings 420 square feet per student. On the basis of our present enrollment, this space per student has dropped to 300 square feet. While this is a very rough way of expressing the quality of our facilities, it nevertheless points up one of our objectives in proposing some of the buildings which are listed in our Development Program. We need more space per student to maintain our educational standards.

Not only do we need unexcelled facilities if we are to maintain our educational leadership, but we need constantly to pioneer in new fields. Since the very beginning, M.I.T. has been looking ahead and has been establishing many firsts in the field of education. Our Faculty is now looking ahead to establishing new educational opportunities. Our proposed laboratories for Nuclear Science and Engineering, for Hydrodynamics, for Electronics, for Biology and Food Technology, and for Metals Processing all represent advanced educational thinking. Acquisition of these new facilities will enable new concepts to be put into practice.

(5) *Finally, we must fund our independence as a private institution.* I do not need to point out to this group the effects of inflation and of the decline in investment income rates on endowed institutions. In the 20 years or so that I have been at the Institute, our endowment funds would have had to multiply two and a half times to yield as much income in the form of purchasing power as they did 20 years ago. They have increased only 60 per cent.

In 1940, with 3,100 students, the Institute's endowment per student was over \$11,000. Assuming a stabilized enrollment of 4,500, our endowment per student will be \$10,000. In 1940, our investment income per student was \$500; in 1947, \$300. On the basis of a stabilized enrollment of 4,500, it will be \$350, still substantially less than it was in 1940.

This decrease in the funds available per student can only in the long run spell a decline in our quality of education. There is, in fact, a serious danger that our whole national system of privately endowed institutions will be seriously weakened by current trends. A recent study, for example, shows that in 1920-1921, private contributions to our colleges on a per student basis amounted to \$158 per student enrolled, whereas in 1941-1942 they were less than half this amount, namely, \$73 per student. According to another study, a typical group of colleges received an average of \$52,000,000 a year in new endowment from 1920 to 1930. In the next decade this had fallen to \$42,000,000 a year, and from 1940 to 1945 this same group of institutions received only \$43,000,000 a year, in spite of the fact that the national income was almost double what it was in the 1930's.

Implicit in this declining support of our privately endowed institutions is the danger of their losing their private status by being forced to accept government subsidy and control. M.I.T. is certainly not immune to this hazard, and I submit that one of our most important objectives in this new Development Program is to underwrite our status as a free institution, to fund our independence.

It is of vital importance that M.I.T., as a pace-setting institution, preserve its freedom and its strength, not only for its own sake but as an example. It should exercise leadership in demonstrating that resources can be obtained under our free-enterprise system for the support of privately endowed institutions. We believe that if M.I.T. is successful in showing that it can command the large-scale support of individuals, of corporations, and of foundations, it will have provided a demonstration heartening to private education throughout the country.

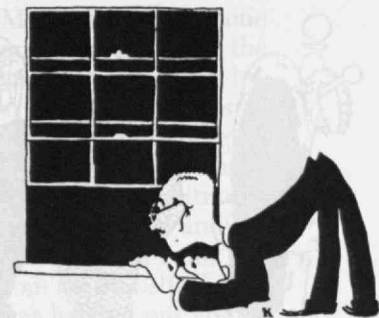
(Concluded on page 194)

How M.I.T. Appears TO AN OUTSIDER ON THE INSIDE

When a Californian Views a New England College

Scientific Objectivity Finds New Meaning

By **GEORGE R. HARRISON**



On November 19 and 20, some 300 Alumni gathered at M.I.T. to listen to a panel of speakers outline the Institute's postwar responsibilities in the training of scientists and engineers. As recorded on page 110 of the December, 1948, *Review*, it was at this meeting that announcement was made of the program of the Committee on Financing Development, under Marshall B. Dalton, '15, to raise \$20,000,000 for additional endowment and buildings to meet the Institute's post-war needs.

Of the various addresses which were given, none was better received than the concluding spirited remarks by George R. Harrison, Dean of Science, who jovially provided opportunity "to see ourselves as others see us." The *Review* is pleased to publish Dean Harrison's talk with only sufficient editing to make his remarks as suitable to the reader as to the favored few who were present during the two-day meeting. — Ed.

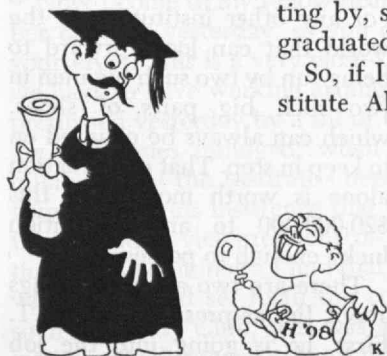
WHEN the annual Alumni Banquet rolls around I am invited to attend, but I have to sit at a little table marked "Staff," along with the faithful few who are forever barred by fate from aspiring to that honorable title "Alumnus of M.I.T." Of course, I might dedicate four years to amending this situation, but even if I could afford Uncle Horace's tuition, there is some overcrowding here and our requirements for admission are rather rigid, so I doubt that I would be willing to risk contact with the Admissions Office.

I have tried posing as an Alumnus, but without success. Last year I attended the 50th reunion of the Class of 1898. I walked up to an elderly gentleman of the Class, held out my hand, and said, "How do you do. Harrison, '98." He said, "Good heavens, my friend, you look remarkably well preserved." I saw I was not getting by, so I said, "Sorry, not graduated — born."

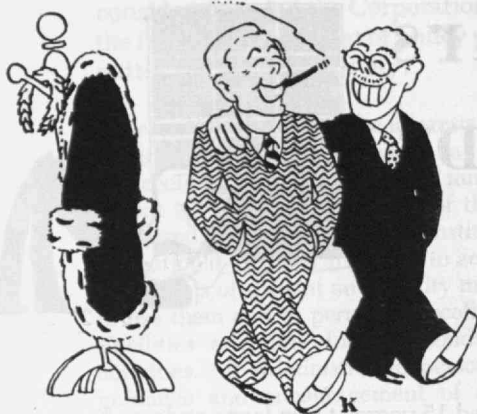
So, if I can never be an Institute Alumnus, I might as well take advantage of the fact and tell you just what I think of the place. To prove that I am competent to serve as an impartial observer, my credentials

show that I have served 15 years at two large endowed universities, one eastern and one western (but neither of which plots its endowment and gift curves on a logarithmic basis) topped off by nearly 20 years on the staff at M.I.T. In fact, my period at M.I.T. coincides almost exactly with that of Dr. Compton. I felt, of course, that it would be only polite to let him come here first, but I came myself as soon thereafter as railway transportation could be comfortably arranged. Even before this I had had an opportunity to observe M.I.T. for a while from a vantage point up the river, and I had some pretty definite opinions about it. I have some even more definite opinions about it now. Having been given carte blanche by the committee to tell you the truth and the whole truth, I shall proceed to take full advantage of this unusual opportunity. Perhaps you feel that I am not bold enough to say what I really think. Perhaps you think, "This fellow won't dare give us the real story, even though he isn't tied by bonds of innate loyalty to M.I.T., because he has a job here and will have to go on living with these people he is talking about. Gentlemen, I am a free agent. The Philadelphia Rapid Transit Commission has offered me an option, to be taken up at any time I wish, on an excellent position as a streetcar motorman, so I can leave my job here anytime.

First, let me tell you some things about Dr. Compton. I have wanted to tell him what I thought of him for the last 20 years, but I couldn't because he was president. Now I can. I have a good many friends who have become college presidents, and I know that a college president is a very lonely man. He dons, with his position, a uniform less visible but just as tangible as the lacework Mother Hubbard of an archbishop, and this refractive aura deflects and distorts the simplest human relationships. When a college president has made a speech, nobody can tell him that he has made a good speech; lots of people can say it, and do, but he never can know whether they really mean it or are just trying to "butter him up." Many of them won't say it, because they are afraid he will *think* they are trying to butter him up. Nor does it do much good, after the first two or three times, for the college president to tell one of his professors that *he* has made a good speech. The professor knows the president intends to keep him feeling good, and expects his praise as a matter of course, so the end result is that he merely feels dejected when praise is withheld. This keeps the president worried all the time for fear he will accidentally forget to praise everything. Presidential praise, given or taken, is like the tobacco habit; I am



I saw I was not getting by . . .



... back to the land of mortals

fine, but no one in the world could tell him so; he had to find it out for himself. It is a pleasure to welcome Dr. Compton back to the community of mortals.

Since he is again a mortal, I would be shirking my duty if I did not tell you of his greatest fault. He is a "yes man." I don't mean a "yes man" in the usual sense, but in a very unusual sense. After they have been in office one year, let alone 19, most college presidents have a spontaneous reaction of "no" to any request. It is a defensive mechanism that is built into the position, and it is necessary to argue it away before you get anywhere. Dr. Compton always spontaneously reacts with a "yes," and then tries to bring about the desired action. Let me give you an example of how this sort of thing works out.

A few years ago the Budget Committee, which consists of vice-presidents and treasurers and deans and such, worked very hard to balance the budget, and by dint of careful arguing got the last \$50 distributed exactly where it should go. The president, of course, was in Washington. After the budget was all balanced, and everybody was feeling fine, Dr. Compton was in his office, open to practically anybody in the world, and was there approached by a professor from one of the departments in the School of Science which shall remain unidentified. This professor was fairly new here, but by previous experience had found that the president was a "soft touch." He knew that if he asked his department head for what he wanted, the answer would be "no," because the department head knew that the dean would say "no," because the budget was balanced and there were no more available funds. So this professor approached Dr. Compton and asked for \$5,000 to bring a friend of his who needed a job over from Europe to do some research for a year. Of course Dr. Compton said he could have \$5,000; he, the president, would take it from some special funds which he had available. So the vice-president and the dean involved got carbon copies of a letter to the professor saying he could invite his friend, and the \$5,000 would come from this special fund. Well, of course, you understand that this special fund, like all other special funds, was what the Budget Committee had

told that the man who smokes feels, while he is smoking, like the man who doesn't smoke feels all the time.

I know that there have been times when Dr. Compton was wondering to himself, "How am I doing?" and has felt real misgivings as to how he was doing. Actually he was doing

used to balance the budget. But good deans and vice-presidents always back up the chief, of course, and the professor got his \$5,000, the dean got high blood pressure, and, not having any blood pressure, Jim Killian got an unbalanced budget. Of course, you know the pay-off on this story, gentlemen; the European importee turned out to make the most exciting discovery of the year from that particular laboratory, and Dr. Compton's generous \$5,000 turned out to be one of our best investments of the year. This I consider to be the basic phenomenon behind Dr. Compton's greatness, and one of the major contributions he has made to the greatness of M.I.T.

Let me read from an article in the *New York Times* of Sunday, October 17, entitled "Top Man in Science." The top man, of course, was Dr. Compton. The quotation I want to give you is: "As President of M.I.T. he has built the institution from a rather conservative place, as far as experimenting is concerned, to the world's greatest research-engineering-teaching center." Now I don't believe everything I read in the papers, but I do believe that, and it wasn't written by an Institute Alumnus, either. Or at least I don't think it was, although the most amazing people do turn out to be, sometimes.

I wonder how many of you have seen Dr. Compton thoroughly angry. I have, at least three times. He has a typical reaction. I have seen him when he received a letter, usually from Washington, which would make any ordinary man grind his teeth, tear out his hair, stamp on the floor, wave his arms, and push his blood pressure up to 360/150. Instead, Dr. Compton looks very complacent; then he smiles, taps the arm of his chair, says "all right," and gets up and walks away. Gentlemen, you can't tell me that you are going to let a man like that down for a mere \$20,000,000.

Now, who else can I tell you about? Oh, yes, there's Jim Killian, and I must hurry up to tell you about him while I still can. I have known Jim for nearly 19 years, but within a few months, after the coronation ceremonies in April, I won't be able to tell him what I think of him anymore, or at least he won't be able to believe it. I have known Jim ever since he was the editor of *The Review*, and I was an underpaid contributor to that valued sheet.

Some of us have worried for a long time over who could be found, when the time came, to fill Dr. Compton's shoes. Since no one *could* fill them, it is very fortunate for Technology that he is going to fill them himself. In the meantime, Jim Killian has been fashioning a pair of shoes of his own, and they are big shoes. I don't know of any other institution in the world that can look forward to being run by two such big men in two such big pairs of shoes, which can always be counted on to keep in step. That combination alone is worth more than this \$20,000,000 to any institution lucky enough to possess it.

There are two amazing things about Jim as president of M.I.T. First, he is going into the job with his eyes open. Usually the job of catching a president is



... not having any blood pressure

difficult but possible if the right technique is used. You go a long way away and find somebody who doesn't know much about the place, and whom the Faculty doesn't know. Then you import him and spring him on the Faculty, who are always willing to give someone they don't know anything about the benefit of the doubt for at least one week. You promise the president all the money in the world to spend, without telling him that he has to raise it himself, and then, like the fraternity rushee who gets his suitcase carried from the station before initiation, but afterwards has to carry everybody else's suitcases, he, the president, finds himself carrying the whole place. But Jim has been carrying suitcases around here for a long time; he has strong shoulders, and seems to like it, so you have the doubly remarkable phenomenon of a president who knows in advance what he is up against, and one who has had his Faculty wholeheartedly with him many years in advance of his actual initiation.

I can't give you a real story on everybody at the Institute, of course, but I must tell you what I really think of Horace Ford. Most fiscal officials of universities get along with the Faculty, according to my experience, with a mutual attitude which can be described politely as armed neutrality. I remember the treasurer of an institution with which I was once connected whose chief contact with the Faculty was through a remark he was said to have made to this effect: "Oh, Professors is cheap." Another fiscal official of the same institution got tangled in my hair over something, the details of which I have forgotten, and the only way I could relieve my feelings was by writing a Limerick about him. I don't remember any of the Limerick except the last four words, which were "that vicious officious official."

Now Uncle Horace can say "no," and make you just love him. I tried to borrow \$3,000 from the Institute for down payment on a house soon after I came here; such practice is customary in many universities. Dr. Compton, of course, said, "yes." Uncle Horace gently said, "no." He explained that the Institute would like to help in housing its Faculty but since it had no campus of its own, the making of such a loan did not seem good policy. I went on renting my house, and two years later its price came down \$3,000 and I bought it without any down payment, so I didn't owe anybody anything, except Uncle Horace for some good advice. I know I speak for hundreds of others when I say, "Blessed be the name of Horace, and may his endowment increase logarithmically."

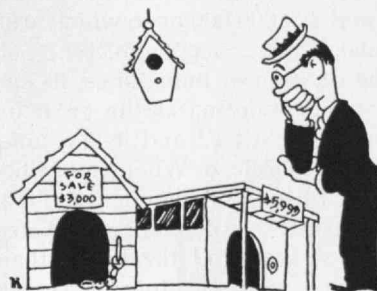
Now I come to my fellow deans. You heard a number of them yesterday, so you can size them up for yourselves. This is a very close-knit group. Of course, we have to have working arrangements. I was a trifle perturbed yesterday by a bit of the imagery in which my colleagues indulged; when John Burchard was talking about the Institute's need for a Faculty Club I understood his insistence that there be facilities for the executive vice-president of the Alumni Association to play dominoes; I find that easy to visualize. But when Burchard set forth the cultural advantages of such a Faculty Club, that was another matter. I was intrigued by his remark that scholarly dignitaries visiting the Institute could be compared to comets. I must confess, however, that I was stopped by the picture of

all the students lined up on Massachusetts Avenue with whisk brooms in their hands, brushing off the tails of visiting intellectual comets as they filed by. Then Dean Wurster and I don't always agree as to whether the old State, War and Navy Building in Washington is a beautiful building or not. So we have a working agreement; he takes care of the architraves, and I take care of the atoms and molecules, and we both admire each other very much. At least I do.

Then there is the Faculty. From the statistical data in Horace Ford's "Bible" that was handed out yesterday, I noticed that there has been, in recent years, a singular rough parallelism between the number of people on the Faculty, and the annual tuition. Two hundred Faculty members for \$200; 700 Faculty members for \$700. Of course the value of a professor cannot be determined from these figures but don't forget for a minute that those Faculty members have been preselected, specially combed, and attracted to the Institute by what the Institute had to offer. I don't mean just money, although professors' salaries are important. I mean the four things every professor wants and is going to get if he can: economic stability for his family; a plentiful supply of able students to attract to his profession; the provision of adequate surroundings and support to carry on scholarly work in his professional field; and the direction of an administration which is sympathetic and co-operative. Part of my job is to sell professors in the sciences (who are now in other colleges) and prospective department heads, on the fact that M.I.T. has all these things to offer in profusion. At times in the past it has taken quite a lot of showing; now there is so much obvious material to use in the selling job that it becomes a positive pleasure.

Our salary scale is now such as to put M.I.T. in a good over-all competitive position, though it must be raised further before we can consider ourselves in equilibrium again after the postwar readjustment. On an absolute basis, professors, as a class, have fallen considerably in scale of living, even relative to the rest of the upper middle classes.

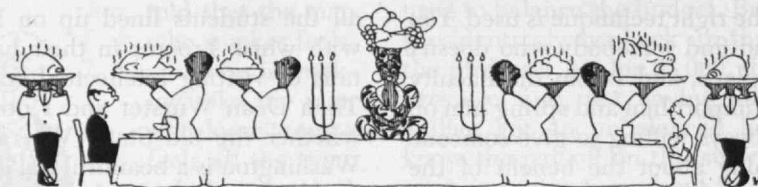
Three thousand dollars was a good salary for a professor in 1907, and he could build a very fine house for this. After World War I the dollar had shrunk to about \$0.50, and \$6,000 was his typical salary,



... he could buy a house

while he could buy a house for \$15,000 if lucky. Thus his purchasing power for houses had been cut to less than half, and whereas the 1907 professor could and did go to Europe fairly often in the summertime, by 1925 he was doing so much less frequently; now he can never go at all unless someone pays his way. The \$6,000 salary has climbed a trifle, but the house has climbed a great deal more, and while it may settle down somewhere around \$25,000, or eight times what it cost in 1907, there is little likelihood of the profes-

sor's salary reaching this. Nevertheless, we must aim to restore, as far as possible, the surroundings that make the scholarly life attractive to the Faculty.



Salaries free from tax . . . plus free housing, travel, expenses, servants

But salary is far from the main thing. Our sister institutions in South America have been laying at the feet of some of our professors offers of what must appear to them as the riches of Samarkand. Salaries of \$15,000, free from income tax from any source whatever, plus free housing, travel expenses, and servants. Imagine having your wife able to keep a maid again! But our boys haven't fallen for the bait, even though careful calculations indicate that the equivalent salary, in good U.S. dollars which could be brought back to this country, is over \$20,000 per year. What's wrong? Students; you couldn't be sure that they had had the proper training and selection to make them capable of climbing the scholarly heights reached at a place like M.I.T., and there is no place like M.I.T.

Why is M.I.T. unique? It is because we are not trying to do too much with the facilities available. M.I.T. is no longer merely an engineering school, even though in 1930 it was the best engineering school in the world, and still is. It is one-fifth of a university with a \$300,000,000 endowment, and no other university has half this endowment. The nonexistent four-fifths consists of a medical school which we do not possess, a theological seminary and school of education which have failed to materialize, a law school which has not been founded, and sundry assorted departments of anthropology, zoology, Greek, comparative anatomy, and so on, for which we have not yet felt the need. Do not misunderstand me; these are all very desirable portions of a university, but they do not happen to be those portions for which we have accepted responsibility. The result is that though we lack the \$240,000,000 endowment which we do not have, we do not miss it; we run our remaining fifth of a university on a bountiful \$60,000,000 instead of the usual \$20,000,000 or so which are the just share of the schools of science, engineering, and architecture, and the division of humanities, in most universities. This specialization marks the great uniqueness of opportunity of M.I.T., and it is a uniqueness which must not be sacrificed. When you bring in that \$20,000,000, remember the remainder of the \$100,000,000 you are not asked to worry about, because M.I.T. has known enough never to bite off more than it can chew.

What is an Institute of Technology? I say it is a specialized university set up to contribute as much as possible, by the training of students and by scholarly output, to the technological needs of society. To achieve this, it is now generally recognized, requires a proper integration of engineering, applied science, and fundamental science. The last two were what were, to a considerable degree, lacking here before 1930. We don't have this perfect integration here even yet, but we are rapidly approaching it. My own feeling is that the integration between engineering and applied science is at present slightly overdone, and that the integration between applied science and funda-

mental science is not yet sufficient. Many of the items which are projected for the M.I.T. of the future are there to assist in arriving at what appears to be the most

desirable point of balance in our operations.

Before 1930, a fundamental scientist who came to M.I.T. was considered by many of his colleagues to have deserted his cause, and gone over to practicality. The engineering departments at M.I.T. were outstanding, but the science departments were subservient, consisting mainly of Faculty members whose function was training engineers in science. Now our science Faculty has been built up in the direction, not only of giving a broad fundamental training to would-be engineers but to scientists as well; our science department also offers a broad professional training in the sciences, particularly in the important postgraduate years of study.

There are many reasons why M.I.T. should have the five best science departments in the country. I can produce five men, many of them department heads, who would claim that we already do. An estimate which I have attempted to keep dispassionate would lead me, however, to estimate that at present we rank, on an average, second. Second to whom? Quite definitely, second to no individual institution. But in one science department we may rank second to the University of Chicago; in another, to the University of California, and so on. It is, of course, somewhat meaningless to ask which is the best department of chemistry or mathematics or physics in the country at any particular time, but one will get quite consistent results if one asks which are the strongest five departments in any particular field, and fairly consistent results are obtained if one asks for the first three. So I have attempted to size up our science departments in terms of win, place, or show. Giving three points to first, two to second, and one for third, I come to the conclusion that, in terms of scholarly reputation, we surely deserve at least nine points out of a possible 15. This is a good showing, when you realize that a school having the fourth best department in the country in each of the five basic scientific fields would rate zero. But I shall not rest satisfied for Technology until the figure comes closer to 15, because M.I.T. has the need for and the opportunity to have the five outstanding scientific departments of the country.

Why the need? At this date I don't think I need argue the point that a great Institute of Technology must contain a great school of science. No one now denies that the best engineers are those with the broadest fundamental training in science, on which has been superposed suitable professional training. It is becoming increasingly obvious, especially as a result of World War II, that a fine technology results from a close association of scientists and engineers. Engineers are supposed to be fundamentally conservative, while scientists need to be fundamentally radical to do their best work, but each needs tempering by the characteristics of the other.

(Continued on page 190)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Council Counsel

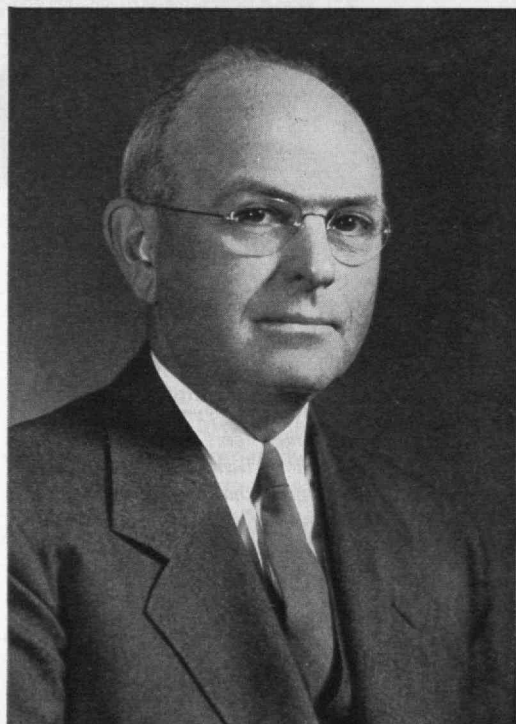
JOHAN A. LUNN, '17, Vice-president of the Alumni Association, presided at the 265th meeting of the M.I.T. Alumni Council held on November 29, when C. George Dandrow, '22, President, was unavoidably absent. Business with which the 122 members concerned themselves included approval of the minutes of the previous meeting, introduction of three guests — John A. Harvey and Douglas M. Van Patter, graduate students from Canada, and Richard F. Sundstrom, '31, of Stockholm — and change of class affiliation for four Alumni. It was also reported that three Faculty members had visited eight M.I.T. clubs between October 14 and November 18; that the December Council meeting would be omitted; and that the Midwinter Meeting of the Alumni Association would be held at Walker Memorial on February 5.

Malcolm G. Kispert, 2-44, Administrative Assistant to the President, presented a résumé of some recent developments at the Institute. He outlined the activities of the successful two-day meeting at the Institute on November 19 and 20 when the Financing Development Program was officially opened. He also advised the Council members of plans for Eastgate, a large apartment building to be erected adjacent to the President's House, as recorded in greater detail on page

171. Mr. Kispert concluded his remarks by announcing that a study is under way of the salaries of faculty members of technical schools as compared with salaries in other professional schools.

Professor John C. Slater, Head of the Department of Physics, was then called upon to introduce Philip M. Morse who has returned to the Institute as professor of physics, after having served as the administrative head of the Brookhaven National Laboratory.

In a talk, illustrated with slides, Professor Morse outlined the origin, history, and development of the Brookhaven National Laboratory. During the two years in which Dr. Morse was director, this much needed research Laboratory in atomic physics has been transferred from an Army camp to an operating research unit. Dr. Morse stressed problems which had been encountered in finding suitable living quarters for the research and administrative staff of Brookhaven, of providing necessary security while simultaneously adapting the Laboratory to research activities for almost a dozen educational institutions in the northeast part of the United States, the manner in which the staff was assembled, and safety measures and public relations activities which had been found necessary, or desirable, in order that the Laboratory might operate efficiently and have the good will of residents in neighboring communities.

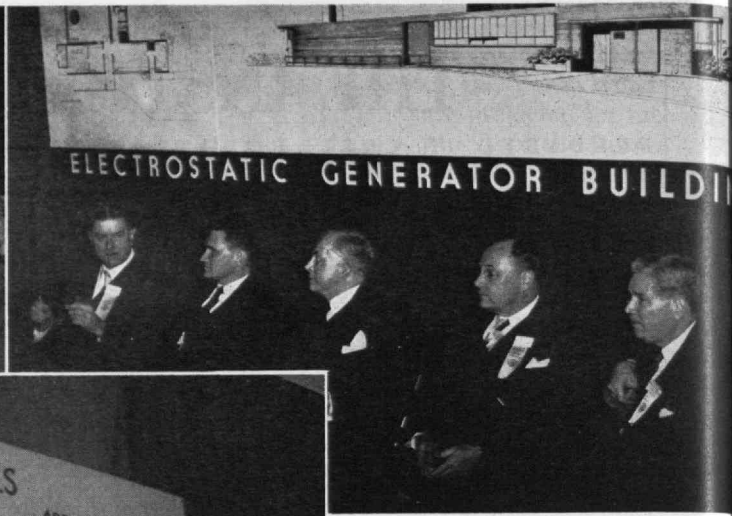


Marshall B. Dalton, '15
General Chairman

Charged with the responsibility of raising \$20,000,000 for additional endowment and new facilities for M.I.T., the Committee on Financing Development will have the leadership of two nationally known Alumni: Marshall B. Dalton, '15, President of the Boston Manufacturers Mutual Fire Insurance Company, and of the Mutual Boiler Insurance Company; and Alfred P. Sloan, Jr., '95, chairman of the Board of General Motors Corporation.



Alfred P. Sloan, Jr., '95
Honorary Chairman



300 MEMBERS OF THE COMMITTEE ON FINANCING DEVELOPMENT



ATTEND FIRST MEETING AT M.I.T. ON NOVEMBER 19-20

M.I.T. Photos



As chronicled on page 110 of the December Review, Alumni and friends of the Institute gathered in Cambridge on November 19 and 20 to study the Institute's high priority postwar needs for buildings and endowments. Shown here are visual impressions of that meeting as caught by the camera. Upper left corner, left to right: Rain made it inadvisable to hold the formal ceremonies dedicating the opening of the 12,000,000-volt electrostatic generator out of doors, so the plaque marking the new building was the center of attention in ceremonies held in Room 10-250 (Huntington Hall). At the ceremonies were: George R. Harrison, Dean of Science; Professor Jerrold R. Zacharias; Captain John G. Johns, James R. Killian, Jr., '26, President; Karl T. Compton, chairman of the Corporation; and Professor Herbert L. Beckwith, '26. The generator is part of the Laboratory for Nuclear Science and Engineering. Upper right: Speakers at the Saturday morning session included (left to right): Alexander Macomber, '07, member of the Committee on Foundations (speaking for Frank B. Jewett, '03, chairman, who could not be present); Joseph J. Snyder, 2-44, Assistant Treasurer of the Institute; Thomas D'A. Brophy, '16, chairman of the Committee on Public Information; H. B. Richmond, '14, chairman of the Committee on Alumni Participa-

tion; and Professor William L. Campbell, '15, chairman of the Committee on Projects. Center: John R. Macomber, '97, chairman of the Corporation's Survey Committee, concluded the Saturday luncheon with a brief statement outlining the work which is to be accomplished in the coming months by the 672 alumni members of the Financing Development Committee. Lower left: At the Saturday luncheon, those at the speaker's table included: Marshall B. Dalton, '15, general chairman of the Financing Development Committee; Karl T. Compton, chairman of the M.I.T. Corporation; Rear Admiral Lawrence B. Richardson, '21; Phillips Ketchum, chairman, Committee on Bequests; Captain John G. Johns, Office of Naval Research; George I. Chatfield, '28, member of the Committee on Public Information; and Thomas D. Cabot, member of the Steering Committee. Lower right: Speakers who opened the meeting, following the luncheon on November 19, and who spoke on the Institute's needs in various educational fields, included: Thomas K. Sherwood, '24, Dean of Engineering; Professor John C. Slater, Head of the Department of Physics; John E. Burchard, '23, Dean of Humanities; Horace S. Ford, Treasurer of M.I.T.; Everett M. Baker, Dean of Students; and Professor William L. Campbell, '15, Executive Director of the Financing Program.

Eastgate: One Floor of Three

THE most unusual apartment building in America is to be erected at 100 Memorial Drive in Cambridge, adjoining the M.I.T. President's House. Thus did Dr. James R. Killian, Jr., '26, President of Technology, and George Willard Smith, President of the New England Mutual Life Insurance Company, announce the completion of two years of co-operative study by these two organizations leading to the beginning of construction on the site of the Shoe and Leather Exposition Building which has now been torn down.

Scale models of the entire project — one of which is shown below — and of several typical room layouts reveal an interesting plan with many novel and practical features which take fullest advantage of the attractive location and provide dwelling units with vistas more like country homes than city apartments. The site, with 430 feet of frontage on the colorful Charles River Basin, a short block from the Kendall Square subway station, provides a two and one-third acre tract of land which has been leased by M.I.T. to New England Mutual Life Insurance Company for 60 years. The insurance company will own and operate the apartment house during this period, at the end of which time it will become the property of M.I.T.

The design of Eastgate — as the new apartment building will be called — embodies a new conception of multiple dwellings. The 12-story building, provides a large living balcony, maximum ventilation and unsurpassed view for each apartment. There will be 261 dwellings units, consisting of studio, one-, two-, and three-bedroom apartments totaling approximately 1,000 rooms. Plans call for open, spacious rooms with large areas of glass, including a glass wall at the end of each living room looking out and across the balcony. Roominess and privacy are increased by the use of a new principle in elevator access, in which the elevators stop only at every third floor. On these floors, there are corridors with private stairways to each apartment on the floors immediately above and below. All apartments on the non-corridor floors are thus given maximum outside exposure, affording much more light, quietness, and through ventilation. Corridor-floor apartments, generally of the one-bedroom size, have all rooms overlooking the Charles River Basin and downtown Boston.

The main structure and its two wings are so placed as to take full advantage of sunlight and breezes and will also insure maximum privacy in the apartments. Generous gardens and play areas are provided by the open plan, and the lower lobby will contain space for stores for the convenience of tenants of the building. There will also be a connecting garage, with parking space both inside and on its roof.

President Killian stated that he and his associates are entering into this project with enthusiasm, for it will mark a long step toward the solution of a problem in Faculty housing which has grown increasingly acute since World War II. "In recent years there has been a substantial expansion in our staff," he said, "with the result that most newcomers have had to go many miles from the Institute in order to find suitable accommodations for their families. We have felt it important that additional modern living facilities be provided near at hand for the convenience of the staff and to provide more community life as an integral part of an urban institution. This timely building project should now make our objective possible of realization."

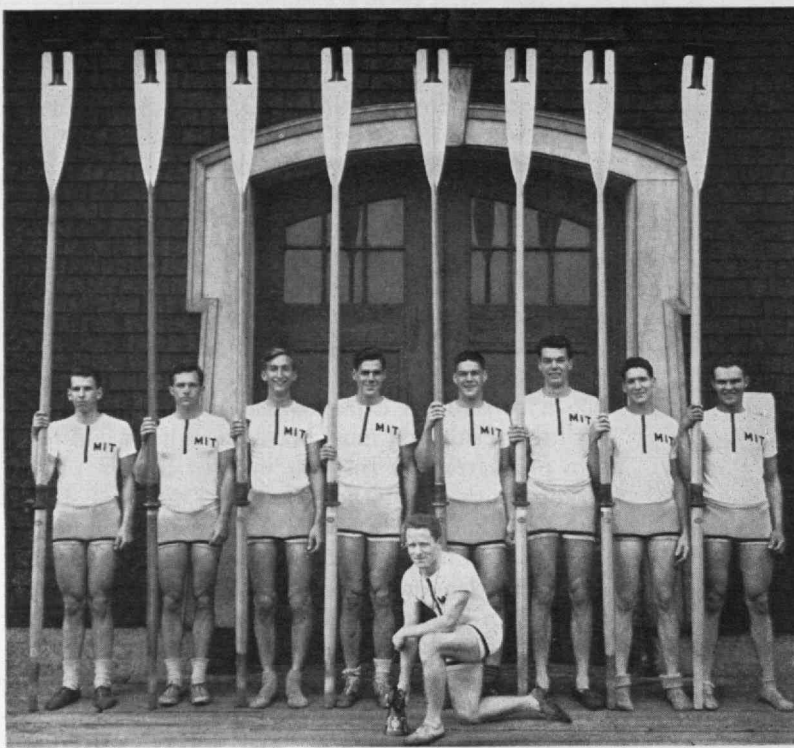
First choice of rentals will be given to veterans, M.I.T. Faculty and staff, married students, and close associates. When the building nears completion, a more definite announcement will be made concerning apartments available to the public and the rents to be charged.

The architects — William H. Brown, '33, Associate Professor of Architecture, Robert W. Kennedy, Assistant Professor of Architecture, and Carl Koch, As-



M.I.T. Photo

Photograph of scale model of Eastgate shows only a few of the original features in the 12-story structure to rise on Memorial Drive, adjacent to the President's House. Each apartment looks into the open, across the Charles River Basin, and each has a maximum amount of sunlight. Corridors occur only on every third floor at which elevators stop. Apartments above and below corridor floors are reached through private stairways having entrance foyers on corridor floors.



At the Poughkeepsie Regatta last June, M.I.T.'s Varsity Crew finished fifth among the 11 intercollegiate crews which participated. Members of the Institute's Varsity Crew who rowed at this colorful annual event (left to right) are: Robert L. Silberman, '48, Harald C. Bjerke, '49, Paul Gerhardt, 3d, '49, Francis L. Marran, '49, Andrew R. Pfeifferberger, '49, Robert C. Weber, '50, Alvin D. Pendleton, '50, John J. Rudolf, Jr., G., William J. Grant, '48, coxswain. This year, James B. McMillin, head coach of Crew, will have only three men from the Poughkeepsie boat to form a nucleus for the 1949 varsity. They are Messrs. Pendleton, Weber, and Bjerke.

The Junior Varsity Crew will fare somewhat better with five oarsmen returning, while the Freshman boatmen return this season as a unit practically intact. M.I.T.'s Freshman Crew, coached by Charles O. Jackson, Jr., won fourth-place honors in its division at Poughkeepsie last spring.

M.I.T. Photo

sistant Professor of Architecture, with consultants Professor Vernon DeMars and Ralph Rapson, Assistant Professor of Architecture — are all on the staff of M.I.T.'s School of Architecture. They have worked closely with Professor William W. Wurster, '17, Dean of Architecture and Planning at M.I.T., and with New England Mutual's architectural consultant, A. Osborne Willauer.

Filial Approval

EMULATION of paternal action was evidenced at the Institute last September when practically half a hundred students, whose fathers are Technology Alumni, registered in the Freshman Class. The growing list, of the last few years, of the father and son group in the first-year class would indicate that educational viewpoints and objectives, like Charity, often begin at home. But this group is not always limited to fathers and sons. At times, as this year, it includes fathers and daughters. Thus, with pleasure we note a representative of the distaff side — Miss Joan M. Fleckenstein of Ionia, Mich. — in the listing of freshmen and Alumni which follows:

Son	Father
John R. Camp	Thomas R. Camp, '25
Kenneth M. Childs, Jr.	Kenneth M. Childs, '17
William C. Church	Walter E. Church, '21
James A. Cook, Jr.	James A. Cook, '12
Edward L. Davis	Malcolm G. Davis, '25
Donald L. Dawes	Lyman M. Dawes, '23
Walter E. Dietz	Walter Dietz, '23
Alexander L. M. Dingee, Jr.	Alexander L. M. Dingee, '22
John A. Dixon	Frank E. Dixon, '06 (deceased)
James Dorsey	Farnum F. Dorsey, '01
Freeman H. Dyke, Jr.	Freeman H. Dyke, '20

Edward C. Facey
Joan M. Fleckenstein
Michael E. Green
Oliver E. Hall
John B. Hampshire
Douglas F. G. Haven
Richard M. Hill
Richard F. Jenney
Harry F. King
Conrad D. Kohler
Richard F. Lacey
William H. Lane
Robert M. Lurie
John P. Lynch
Gilbert B. N. Mar
John B. Mattson, Jr.
Dana W. Mayo
Eugene Mirabelli, Jr.
William H. Mueser, Jr.
Frank J. O'Neil
Robert H. Osborn
Brian P. Parker
Charles L. Proctor
Bruce D. Replogle
John D. Robertson, Jr.
Frank G. Shanklin
Paul H. Skogstad

Donald J. Sontag
George W. Stetson, 3d.
James I. Stockwell
Robert H. Sturdy
John A. Sullivan
Theodore Taylor, Jr.
Arthur S. Turner
William H. Vogt, 3d.
Paul G. Wetherbee
Christopher Winsor
Sarkis M. Zartarian, Jr.

John A. Facey, '21
Jackson G. Fleckenstein, '19
Harry Green, '23
Oliver C. Hall, '14
Benjamin F. Hampshire, '25
Franklin K. Haven, '23
Warren E. Hill, '24
Melvin R. Jenney, '21
Maxon H. King, '25
Carl J. Kohler, '28
Henry R. Lacey, '18
Frederic A. Lane, '18
Joseph M. Lurie, '21
John P. Lynch, '20
Pellian Teh Chi Mar, '15
John B. Mattson, '21
Dana H. N. Mayo, '14
Eugene Mirabelli, '19
William H. Mueser, '22
Frank D. O'Neil, '25
Franklin Osborn, 2d., '11
Milton E. Parker, '23
Harold E. Proctor, '17
Delbert E. Replogle, '24
John D. Robertson, '16
Dunbar L. Shanklin, '23
Herbert W. Skogstad, '19 (deceased)
Herbert P. Sontag, '25
George W. Stetson, Jr., '25
Ernest F. Stockwell, '22
William W. Sturdy, '24
John W. W. Sullivan, '23
Theodore Taylor, '26
Stanley H. Turner, '24
William H. Vogt, Jr., '19
George B. Wetherbee, '21
Paul W. Winsor, Jr., '22
Sarkis M. Zartarian, '24

(Continued on page 174)

BUSINESS IN MOTION

To our Colleagues in American Business ...

Here is another example of the fact that the cost of material per pound is not so significant as the cost of the finished part or product made out of it. In fact, judging material costs on a cents-per-pound basis may be completely misleading.

Revere during the war was asked by the government to apply its long experience with copper and brass to the manufacture of mill products in aluminum. It has remained in the aluminum business, making tubing, extruded shapes, and forgings. The latter naturally are custom-made to special designs. One of these seemed interesting to us, and the customer was asked if he would care to provide facts and figures that would show why he found it economical to choose an aluminum forging for this machine part.

He told us that he originally made this out of cast iron, which is, of course, an inexpensive material. An aluminum forging naturally costs more than an iron casting, in this case 5.2% extra. That would seem to be a big handicap to overcome, but a number of important savings when totaled together showed that this "costly" forging was actually saving considerable sums.

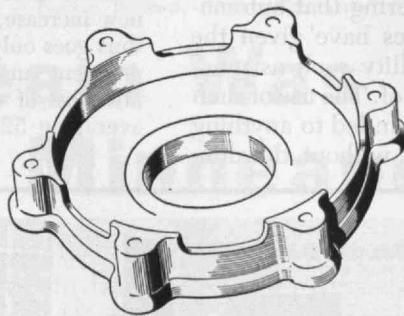
For example, the iron casting was $\frac{1}{8}$ inch oversize on top and bottom, to allow for machining; the aluminum forging is so accurate to dimensions that only $\frac{1}{32}$ inch is allowed for machining. This means

75% less stock is removed when machining the two faces.

Machining cost is 75% less than on the iron casting, this figure including a loss of 10% of the castings due to defects uncovered by machining. Since the forging is dense and uniform, free from porosities, it is unnecessary to pressure-test it to make certain of its quality. This pressure test of the casting was an expensive process in terms of labor costs and time consumed. Doing away with it not only

reduced costs but speeded up production. When all the figures were in, it was found that this forging which was 5.2% more expensive actually cost 35.4% less as a finished part. And it was a better part, too, in every way.

If you are making or buying castings, Revere suggests that you investigate forgings. They have many structural advantages, and, as this example shows, may also offer economies. In fact, no matter what you make or buy, Revere recommends that you disregard the initial cost of materials. It may very well be that a more expensive material is less costly in the end and will not only save money but improve your product's appeal to your market. One final thought — suppliers to every industry will be delighted to collaborate with you in your studies of this subject. Why not call them in and add their knowledge to your own?



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Chemistry and Sociology

ROBERT E. WILSON, '16, chairman of the Board of Standard Oil Company of Indiana, was the first chemist, the first industrialist, and the first Technology Alumnus to deliver an Arthur Dehon Little Memorial Lecture when he spoke in Walker Memorial on November 23. It might be added, that he was also the first member of the Corporation to have this distinction.

Drawing on his wide experience in chemistry and chemical engineering in industry, in universities, and in government service, Dr. Wilson was admirably qualified to speak on "Research on a Single Reaction and Its Social Effects." In his address, Dr. Wilson pointed out that life in America is what it is today largely as a result of research on a single chemical reaction — the cracking reaction that breaks large hydrocarbon molecules into smaller ones so that the useful supply from gasoline reserves has been more than doubled.

The tremendous significance of the cracking process was vividly brought out by considering that automobiles, trucks, tractors, and airplanes have given the American public freedom of mobility such as mankind had never previously dreamed of. The use of such vehicles could never have been expanded to anything like today's quantities and tempos without the dou-

bling or trebling of the gasoline supply that cracking made possible.

Established in 1944 with funds donated by Arthur D. Little, Inc., it is the purpose of these Memorial Lectures to record the deepest thoughts and convictions of the lecturers, based on many years of experience in their contacts with science, society, government, economics, and the humanities. The first Arthur Dehon Little Memorial Lecture was given two years ago by Sir Edward V. Appleton; last year it was given by J. Robert Oppenheimer.

Increment

AN increase in tuition of \$100 at M.I.T., to take effect with the opening of the fall term in 1949, will bring the Institute's comprehensive tuition, including all fees, to \$800 for an academic year.

The 15 per cent increase in tuition will be accompanied by a 30 per cent increase in scholarship aid and by a still further liberalizing of student loans. Loans up to a total of \$250,000 a year can be made to qualified applicants out of the Institute's revolving Loan Fund, the largest in any American college. In announcing the increased tuition, President Killian said:

Since 1939-1940 the Institute's operating expenses have risen more than 60 per cent and they are still rising. The over-all increase in tuition since that time, including the new increase, amounts to approximately 33 per cent and thus goes only part way toward meeting the higher costs. A recent survey of college fees showed that a representative list of endowed institutions has reported increases averaging 52 per cent since 1939-1940. The Institute's
(Continued on page 176)



Shown above are 57 of the 94 members of the Class of 1898 who were present at their 50th reunion celebration which was held last June at The Country Club in Brookline. First row, left to right: Reginald S. Tobey, George W. Treat, Roger W. Babson, Fred B. Cutter, George T. Cottle, Lester D. Gardner, Charles S. Hurter, Elliott R. Barker, Frank B. Perry, Ernest F. Russ, Edward S. Chapin, William R. Strickland, Lamont Rich, John S. Bleeker, Van Rensselaer Lansingh, and David C. Fenner. Second row, left to right: Fred H. Twombly, Carl S. High, Clarence Goldsmith, Ralph T. Horton, Robert M. Vining, Robert S. Allyn, Shirley S. Philbrick, Maurice F. Delano, Benson B. Priest, Robert M. Draper, Henry C. Belcher, Paul B. Wesson, Arthur A. Blanchard, Willis L. Learned, Albert W. Tucker, Frank F. Colcord, and Ernest A. Bragg. Third row, left to right: William Brewster, Edgar A. Weimer, Willard B. Nelson, Karl W. Waterson, Heber A. Hopkins, Walter A. Cleaveland, Lyman F. Hewins, Simon Fleisher, Ray C. Faught, Henry F. Scott, Frederic M. Kendall, David H. Blossom, Joseph C. Riley, and Ernest Woelfel. Fourth row, left to right: Edward N. Milliken, Rudolph Tietig, Julius E. Nolte, Walter H. Lee, Milan V. Ayres, Fred B. Dawes, Albion W. Shaw, Edmund C. Little, Howard L. Bodwell, and Alvan L. Davis.

Fay Photo



New Home Office Building, North American Life and Casualty Company, Minneapolis, Minn.
Architects—Lang and Raugland; Associate Architects—Johnson and Backstrom;
General Contractors—Pearson Brothers; Heating Contractor—F. S. Lamson Company

When Steam Was Turned On In Minneapolis

Steam was turned on this fall under Webster Moderator Control in the new Home Office Building of North American Life and Casualty Company.

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Effective cooperation of the Webster Minneapolis Representative with the building owners, their architects and heating contractors contributed to the successful planning and completion of

this project. Friendly service to all the factors in building construction and operation is a widely appreciated component of Webster Heating Systems.

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THE INSTITUTE GAZETTE

(Continued from page 174)

percentage increase in tuition is thus less than the average, despite the fact that scientific and engineering education is more expensive because of the extensive laboratories and elaborate equipment required. M.I.T. continues its long-standing policy of having a single comprehensive tuition which includes the fees that are usually additional charges, such as athletic, medical, matriculation, and diploma fees.

Except for increasing scholarship funds, we shall apply the additional income to cover necessary increases in salaries and wages which have already been given to enable our personnel to meet rises in the cost of living, and to enable M.I.T. to maintain an outstanding Faculty. Without the increase in tuition the Institute would be faced with a dangerously large deficit. Even with the increase in tuition the student will be paying only a fraction of the cost of his education, the rest being met by income from endowment and other sources.

In recent years we have received many additions to our scholarship funds by gifts and bequests, and these funds, supplemented by a special allotment from the increased fees, and the Technology Loan Fund will meet any increased needs for student aid resulting from the higher tuition. The number of available scholarship awards will be increased by about 30 per cent, and the average amount per award will be increased by the same amount. In no year since 1941 has the demand for new loans from the Technology Loan Fund exceeded \$50,000. The Fund is now in a position to care for the needs of all qualified applicants up to a total of \$250,000 per year. On January 1,

1949, the 2 per cent interest rate will be decreased to 1 per cent on all outstanding loans as well as on new loans. Wherever possible, the Institute will seek increases in fellowship stipends to cover the increase in tuition.

In his announcement Dr. Killian spoke also of the Administration's determination to adhere to the ideal of continually maintaining M.I.T. as one of the independent institutions in a position of leadership in engineering, science, and architecture. He emphasized the importance of this ideal in view of trends which threaten the independence of endowed institutions. "It is becoming increasingly important," Dr. Killian said, "that a certain number of private and independent educational institutions should maintain positions of unquestioned leadership, and thus set standards of achievement and freedom for all higher education."

Midwinter Boston Meeting

SATURDAY, February 5, is the date set for the Midwinter Meeting of the M.I.T. Alumni Association, at which Karl T. Compton, chairman of the M.I.T. Corporation, and James R. Killian, Jr., '26, President, will speak on recent developments at the Institute. Professor Robley D. Evans of the Department of Physics will discuss the latest research work in medical and related fields which has been made possible by new techniques with high-voltage equipment and in the field of atomic energy.

Prior to the evening talks, a cafeteria-style dinner will be served in Morss Hall of Walker Memorial, with tables arranged according to classes.

(Continued on page 178)

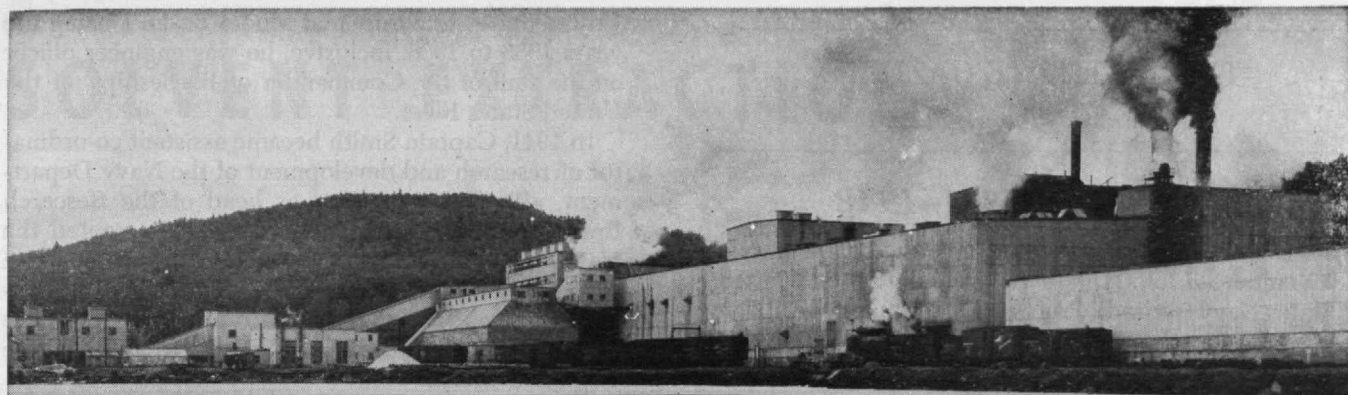
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The Streamlined, Diesel-powered
Eagle Fleet Runs between
St. Louis and the West-Southwest



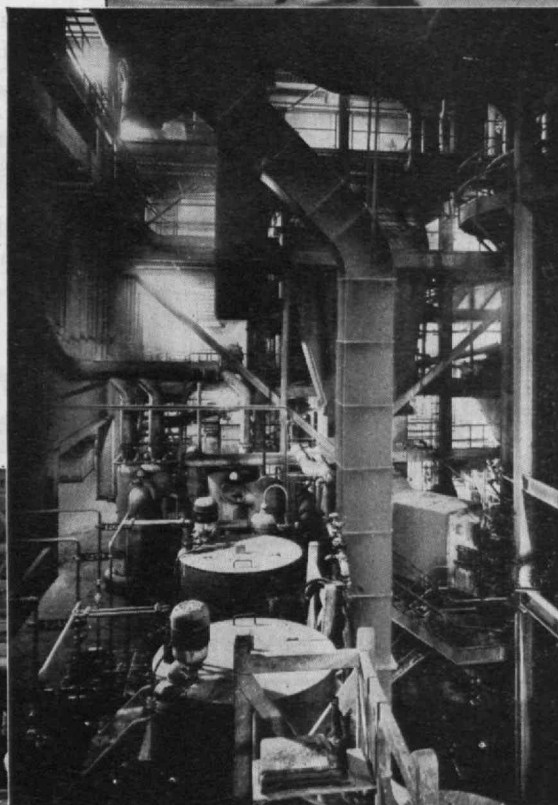
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To expedite the design and construction of a Pulp Mill for Marathon Paper Mills of Canada, Ltd., Stone & Webster Engineering Corporation established a supplementary organization of engineers, specialists and draftsmen to act as part of the client's own engineering department. The Engineering Corporation also furnished consulting advice on special phases of the project and supervised all the construction.



The Bleached Sulphate Pulp Mill of Marathon Paper Mills of Canada, Ltd., located at Marathon, Ontario, on the North Shore of Lake Superior.



Above: Power and Recovery Boiler Room. Left: Machine Room — Dry End.



STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INC.

THE INSTITUTE GAZETTE

(Continued from page 176)

Lybrand P. Smith: 1891-1948

It is with regret that we announce the death, on November 25, of Captain Lybrand P. Smith, United States Navy (retired), Professor Emeritus of Naval Engineering in the Department of Naval Architecture and Marine Engineering. Captain Smith served in the Department from 1945 until 1947.

A native of Decatur, Ill., where he was born in 1891, Captain Smith was awarded the degree of doctor of science by American University in 1935. His long and distinguished career with the Navy began in 1911 upon his graduation from the U.S. Naval Academy.

From 1919-1921 Captain Smith held various cabinet posts in the Dominican Republic. From 1921 to 1923 he was commercial superintendent of the Naval Communication Service. He then became senior assistant engineer and later chief engineer of the U.S.S. *Colorado*. After two years with the repair division of the Bureau of Engineering from 1926 to 1928, Captain Smith became commanding officer of the U.S.S. *Zeilin* and then of the U.S.S. *Claxton*, thereafter serving successively as officer in charge of the United States Naval Boiler Laboratory; of the Boiler Desk in the Design Division of the Bureau of Engineering; and of the Propeller Desk, with additional duty for research at the

United States Experimental Model Basin. During the years 1936 to 1938, inclusive, he was engineer officer on the staff of the Commander of Battleships, of the United States Fleet.

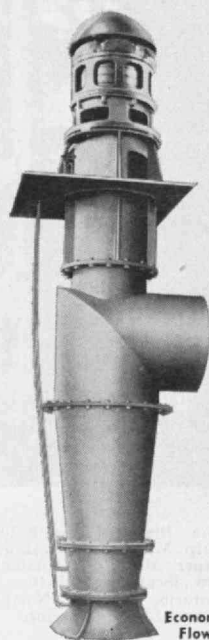
In 1941, Captain Smith became assistant co-ordinator of research and development of the Navy Department, after having served as head of the Research Branch of the Bureau of Ships. He represented the Navy on the National Defense Research Committee until he was released from active duty in 1945, following retirement for physical disability incurred in the line of duty. In 1946 Captain Smith was awarded the Legion of Merit.

Civil and Sanitary Laboratory Status

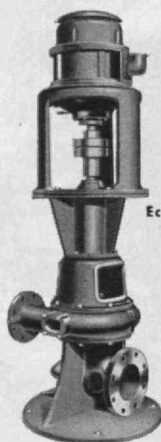
WELL attended meetings of the Visiting Committee on the Department of Civil and Sanitary Engineering* were held at the Institute on December 1 and 2, 1947. A luncheon in the Campus Room of the Graduate House on December 2 was attended by the staff of the Department, the members of the Committee, Vice-president James R. Killian, Jr., '26, Executive Vice-president Edward L. Moreland, '07, Dean Thomas K. Sherwood, '24, and Robert M. Kimball, '33, Administrative Assistant to President Compton.

(Continued on page 180)

* Members of this Committee for 1947-1948 were: Thomas C. Desmond, '09, chairman, Allan R. Cullimore, '07, Richard H. Gould, '11, Harold Bugbee, '20, H. W. McCurdy, '22, Thomas F. Farrell, and Beauchamp E. Smith.



Economy Axial Flow Pump



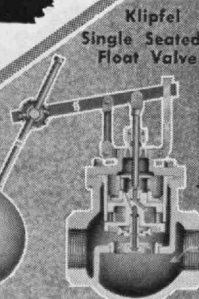
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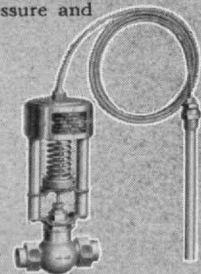
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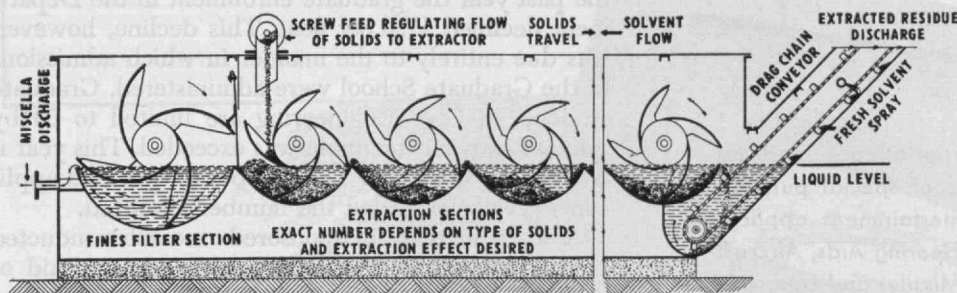
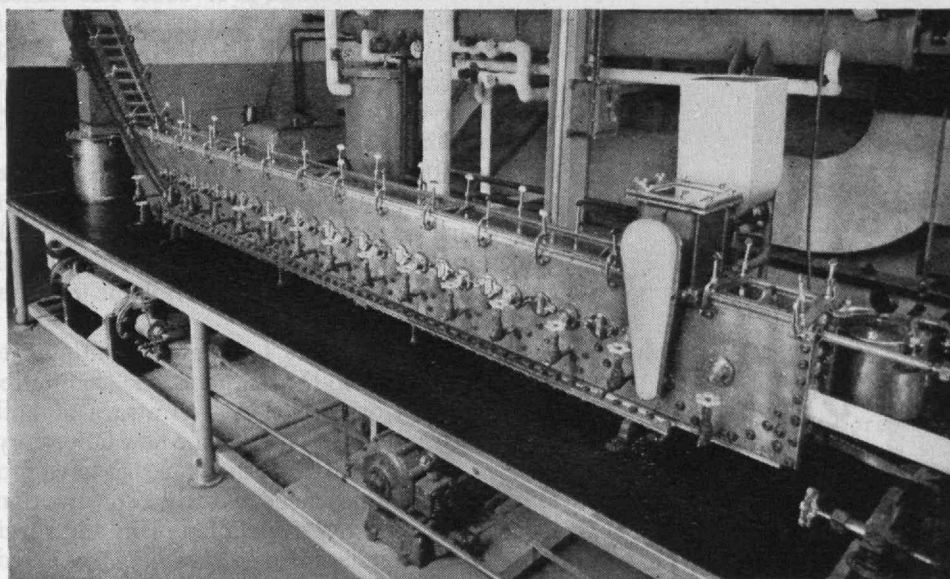


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FIELD ERECTION

INITIAL OPERATION

THE INSTITUTE GAZETTE

(Continued from page 178)

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During the past year, the undergraduate enrollment in Civil Engineering has increased by 16.3 per cent, as compared to an increase of 9.5 per cent for the total enrollment of the Institute. This is especially gratifying since the decline of undergraduate enrollment in Civil Engineering prior to World War II created one of the major problems of the Department. During the past year the graduate enrollment in the Department declined 17.1 per cent. This decline, however, was due entirely to the manner in which admissions to the Graduate School were administered. Graduate students in Civil Engineering are limited to 50 by quota. Last year the quota was exceeded. This year it was strictly observed. The number of qualified applicants greatly exceeded the number admitted.

A sharp increase in sponsored research conducted by the Department, including both grants-in-aid of research and contracts under the Division of Industrial Coöperation, was noted. In 1945-1946 there were no contracts, but the value of such work was \$30,557 in 1946-1947, and \$113,170 in 1947-1948. The current research projects are diversified in nature and are divided between the divisions of the Department as follows: Structural Engineering, \$27,600; Soil Mechanics, \$23,957; Hydraulic Engineering, \$41,300; Sanitary Engineering, \$20,313.

The Committee is much interested in the reaction to the new undergraduate curriculum in Civil Engineering, which has just been put into operation. It is too soon to reach any conclusions as to how it will work out, but such information as is available indicates that it is being well received.

The new Hydrodynamics Laboratory continues to be the major need of the Department. The Committee realizes that the Corporation is well aware of both the importance and the urgency of the new laboratory, and that steps have already been taken that have provided part of the funds needed for its construction. Since our report of last year, detailed plans and specifications for the new laboratory have been prepared. Largely because of increases in construction costs during the past year, the estimated cost of the laboratory is now substantially greater than had originally been anticipated. In collaboration with the Department, the architects are now engaged in a study to eliminate certain features of the proposed laboratory, in an effort to reduce its estimated cost. The excellent work now being conducted under the direction of Professor Arthur T. Ippen, with the limited facilities available to him in the present temporary Hydraulics Laboratory, and the fact that he is faced with the probable necessity of declining to accept a number of desirable research projects because of present space limitations, are strong indications of the need of the new laboratory. We can only recommend that the Institute continue its campaign to obtain the required funds.

The Committee is much interested in the investigations dealing with the effect of impulsive loadings on
(Continued on page 182)



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THE INSTITUTE GAZETTE

(Continued from page 180)

reinforced concrete beams, being conducted in the new Structural Dynamics Laboratory by Robert J. Hansen, Assistant Professor of Structural Engineering, and is pleased to learn that the Concrete Laboratory will be developed next year under his direction. For several years the Committee has urged the resumption of research in this field by the Department.

Research in the Structural Analysis Laboratory is severely handicapped by the lack of loading devices that would permit the testing of medium-sized steel models. Charles H. Norris, '31, Associate Professor of Structural Engineering, who is in charge of this laboratory, has suggested the construction of a universal loading frame, which would go far toward meeting this deficiency. We urge the construction of such a frame which would cost approximately \$10,000.

Herman J. Shea, '33, Associate Professor of Surveying, who is in charge of instruction in this field, presented the Committee with a report dealing with a proposal to complete the equipping of the Photogrammetry Laboratory at an estimated cost of \$6,225. The Committee was impressed by the need of completing this laboratory, and is delighted to learn that since its meeting, funds have been made available for this purpose through a special gift.

The William Thompson Sedgwick Laboratories of Sanitary Science, which were dedicated on December 3, 1947, were inspected by the Committee on December 1. These fine laboratories, which have been developed during the term of service of the senior members of the Committee, are a fitting tribute to the man for whom they are named. The research program now being carried out under the direction of Clair N. Sawyer, Associate Professor of Sanitary Chemistry, is indicative of the contribution that these laboratories will make to the Institute's program, but for more complete development of research in Sanitary Engineering, consideration should be given to the construction and operation of a pilot-type experiment station for the study of certain problems and the accumulation of basic data relating to the economic treatment of sewage and industrial wastes.

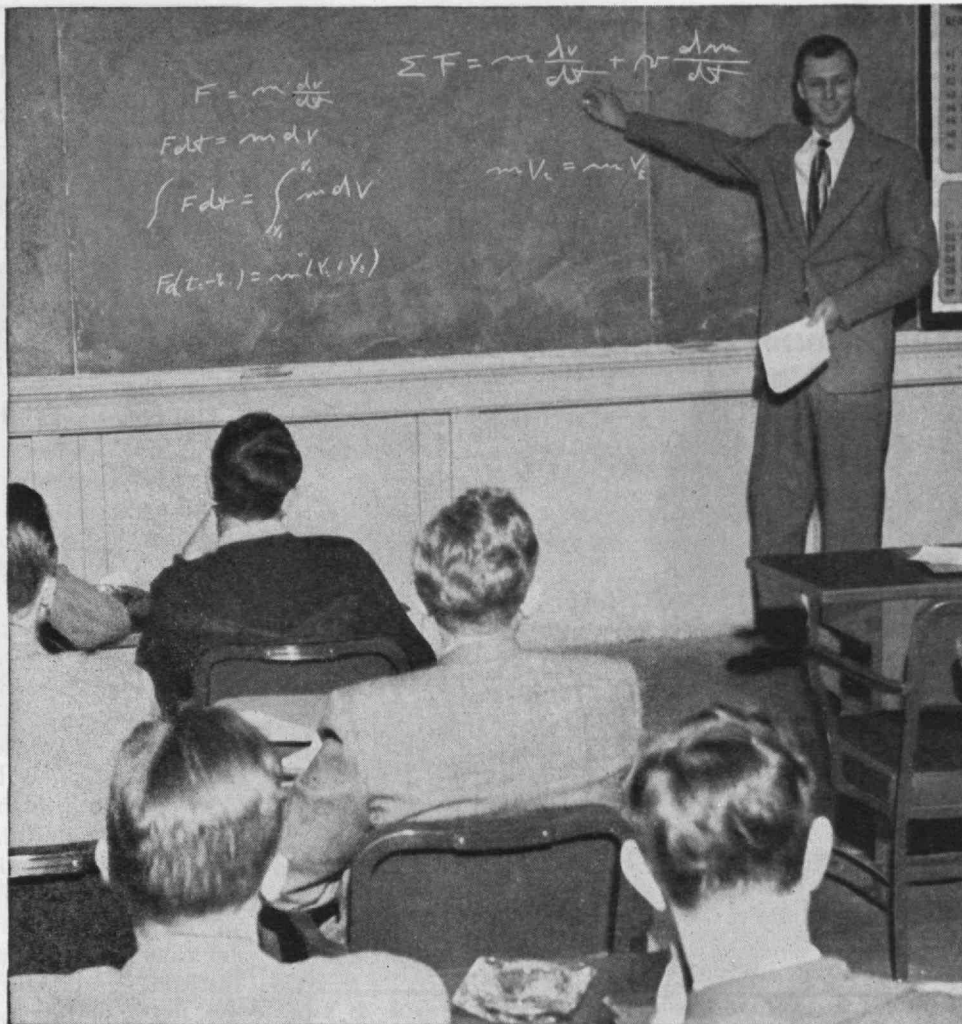
The soil solidification research project being conducted in the Soil Mechanics Laboratory under Donald W. Taylor, '34, Associate Professor of Soil Mechanics, is of interest, and particularly so because it brings the Civil Engineering Department into close contact with the Department of Chemical Engineering in studying the application of colloidal phenomena to soil problems.

The Committee could not help noting the need for repainting and for improved lighting in many of the corridors, offices, drafting rooms, and classrooms of the Civil Engineering Department. It is to be hoped that these conditions can be remedied.

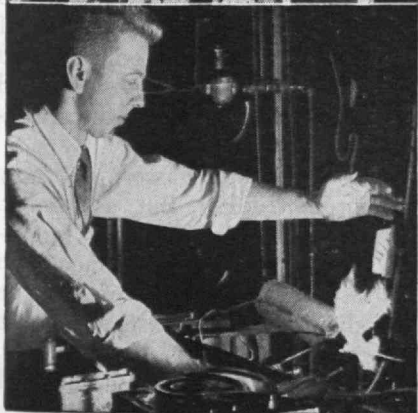
In conclusion, the Committee is pleased to report that the past year has been one of constructive progress in the Department. Some of the plans in which the

(Concluded on page 184)

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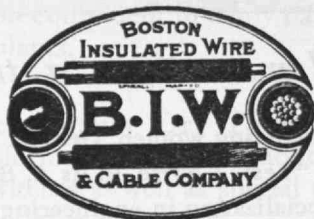
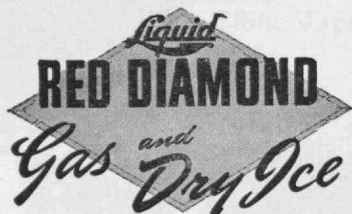
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THE INSTITUTE GAZETTE

(Concluded from page 182)

Committee has participated in the past have been brought to a successful fulfillment. Other plans in which it has been much interested are in the process of being carried out. Much remains to be done, but the staff is working with a fine spirit to build this Department into one that is truly worthy of the Institute's position of leadership in engineering education and research.

The importance of an outstanding Department of Civil and Sanitary Engineering at the Institute has long been recognized, but it should be emphasized that the need for achievement in this field is especially significant today. One has only to point out the presence of problems such as those of traffic congestion, stream pollution, and the susceptibility of structures of all kinds and of congested areas to atomic-bomb damage, to mention only a few, to recognize the social and economic significance of the fields covered by this Department. One has only to consider the immense backlog of construction needs — new power developments, new buildings of all types, and new highways, both in this country and abroad, — to appreciate the opportunities that lie ahead for the young men who will be trained by this Department.

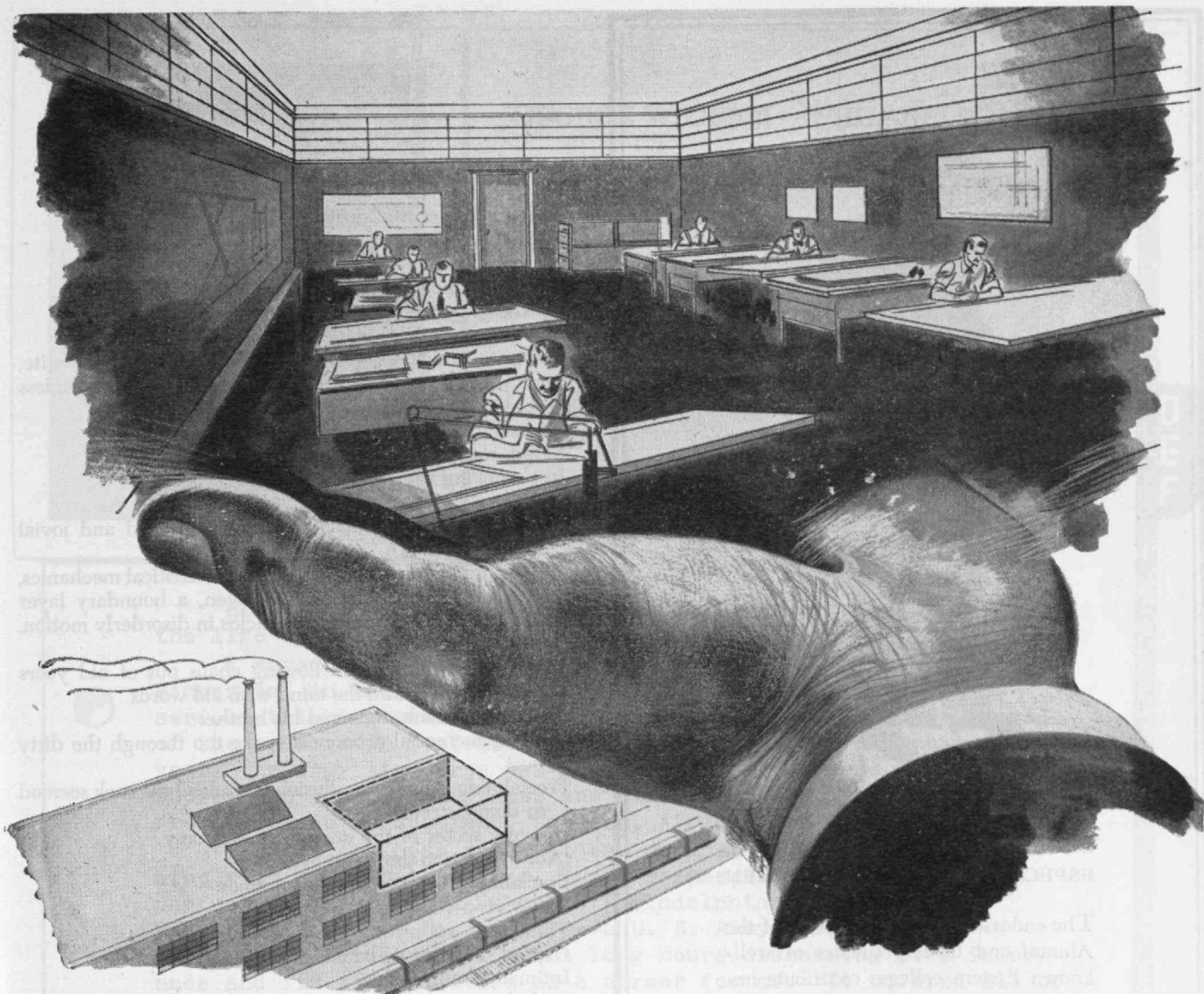
The enrollment of students in the Department of Civil and Sanitary Engineering comprises at the present time approximately four per cent of the entire Institute enrollment. In the opinion of the Committee, the importance of the contribution of civil and sanitary engineers to the social and economic structure of our civilization is such that a larger percentage of students should be enrolled by this Department. This thought underlies the various recommendations made by the Committee in this report.

FIFTY YEARS BEFORE THE MASTHEAD

(Concluded from page 160)

face of governmental restrictions on poundages allowable, thinner paper and narrower margins became the order of the day. Besides, during World War II, the ideas of printers as to production costs magnified, and some of the "finer things" typographical could no longer be at the editor's beck and call. In the face of these handicaps, however, the eighth editor could point with pride to the fact that that which he edited was well edited, and that his readers rightfully appreciated his achievement.

So much for Messrs. Killian and Fassett, and now for Mr. Dudley, the present editor. But, as for Mr. Dudley . . . since anniversary numbers of The Review are scheduled rigidly to appear but once each quarter century, retrospective appraisal of how he warmed the editorial chair necessarily rests with some other publisher than me . . . unless, by 1974, Mr. Dudley has not joined me tending fires in limbo, and instead succumbs to perpetrating his own apology.



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GRAVEL

(Continued from page 161)

One time when the dust-streaked truck
Racketed back into the pit,
No more loose-piled easy shoveling waited,
And one ran catlike up the steep wall,
Up the grey, the blue, the red blurs of rust,
And struck a pick into the compact confusion —
Dolomite, and chert, and quartz, and trap, and pegmatite,
Round, oval, broken cone, shapeless form and formless
shape —

And scrambling sprang one side as the loose rock
Sifted, rattled, rushed, rolled, roared
In a smoking stony cataract down.

"Look here, look here!" (I heard the learned and jovial
mathematician.)

"It is only a matter, a simple matter of statistical mechanics,
This matter of turbulent flow. Given, a boundary layer
And random distribution of particles in disorderly motion,
As bees in a box —"

So turbulent matter and flowing chaos out of old years
May be ticketed, and the mind with old words
Fix order on each stone and his brother.

And the mercurial economist spoke too through the dirty
dust,

Proclaiming stability an illusion, as indeed the rock seemed
to demonstrate

In every sector of the immediate economy
(Not to mention the anatomy),

Proclaiming the eternal dichotomies —

Labor vis-a-vis value,

Value vis-a-vis price,

Capital, increment, boom, crash,

Intimate ambivalence,

And ultimate turbulence,

And no order ever imposable by word or by stone

On man and his brother.

And I spoke with dust-dry lips.

I said, "Eli and Norbert, listen,"

I said, "here is a road to be built,

And a glacier has done the most of the work,

Bringing here in convenient confusion

Tons upon tons of beautiful gravel,

Here in this hollow hill,

Here in the town pit, from which each taxpayer

At his own charges may haul

For his road good gravel.

Now is not this a turbulent thing,

A thing disturbing and unstable,

Ten billion billion tons of thunderous frost

Moving and bellowing through aeons,

Bringing the beautiful gravel to lie here in the hollow hill

Awaiting its lot in roads to be built?

It lies as you talk, and so may we all of us, sometime,

No value it has, wanting labor.

Loaded, hauled, and placed, it is good for something.

Its turbulent chaotic disarray becomes effectual order,

And roads are things of value," I said.

(Concluded on page 188)

GEORGE W. DUNN -- PHILADELPHIA, PA.

*This story should be
of interest to every
college man H.C.C.*

DEF



How did I make the transition from a Teachers' College to the life insurance business? Here is about how it happened.

I waved a fond farewell to Moorhead State Teachers' College, Minnesota, in the spring of 1941, and settled down to do some serious thinking concerning my future. Uncle Sam supplied some of the answers in September of that year, and for the next five years the Army Air Corps was my boss, and my address was a succession of Army Air Bases and A.P.O. numbers, which stretched from Colorado to Scotland, England, Africa, Italy and Corsica.

For two of these years it was my good fortune to be associated with a brother officer, "Cap" Haines, in civilian life a partner in New England Mutual's Philadelphia General Agency, Moore and Haines. He, my wife--a U. S. Army nurse, whom I married in Africa--and I spent long hours discussing life insurance and its possibilities as a career for me. It offered all of the things that I had ever hoped for in business: independence, unlimited income possibilities and, most of all, a never-ending challenge to my ability in a field where limits do not exist, excepting as I alone set them.

Before I had finished my terminal leave, I was studying for my Pennsylvania State Insurance examination, and was making field trips with my friend from overseas.

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George W. Dunn

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Facts such as these helped George Dunn solve his career problem. If you'd like to know more, write Mr. H. C. Chaney, Director of Agencies, New England Mutual Life Insurance Company, 501 Boylston Street, Boston 17, Massachusetts.

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Arthur C. Kenison, '19, Boston
Blaylock Atherton, '24, Nashua
Leland S. Person, '34, Rutland

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GRAVEL

(Concluded from page 186)

And we hauled away, and up out of the pit,
With night hanging over the meadow.
Serene we were, as who would not be:
Glaciers, and thousands of miles of thousands of tons
transported,
But only the labor and the last ten miles gave order and
value.
Over the road we rolled slow and stately,
With a pause at the spring by the maple orchard,
And talk was of Arthur Keene and Harold Bean,
The bobcat heard and the buck deer seen
At the old old crossing on the ridge
Where a star was bright in the brighter sky.

THE TREND OF AFFAIRS

(Concluded from page 154)

The Review during the period in which each editor was responsible for the publication.

Two decades ago, The Review was beginning to establish a format and method of treatment not widely different from that used today. In January, 1929, The Review boasted of an editor (H. E. Lobdell, '17), a managing editor (James R. Killian, Jr., '26), an assistant managing editor (John D. Crawford, '27), a contributing editor (John J. Rowlands), and a circulation manager (Ralph T. Jope, '28). But the lush plethora of engineering trained writing talent has disappeared and, for some time now, the editor has been his own managing editor and assistant managing editor. As for copy, the January, 1929, issue contained an article "Honors Study in Engineering" by Richard H. Frazier, '23, "Telescopes in the Making" by James R. Killian, Jr., '26, in addition to "Evolution Everywhere" by Professor Emeritus Hervey W. Shimer.

The January, 1939, issue of The Review was the last under the editorship of James R. Killian, Jr., who as President Compton's administrative assistant succeeded Vannevar Bush, '16. The Institute's Department of English and History supplied a new editor when Professor Frederick G. Fassett, Jr. left the classroom to wield the blue pencil, beginning with the February, 1939, issue.

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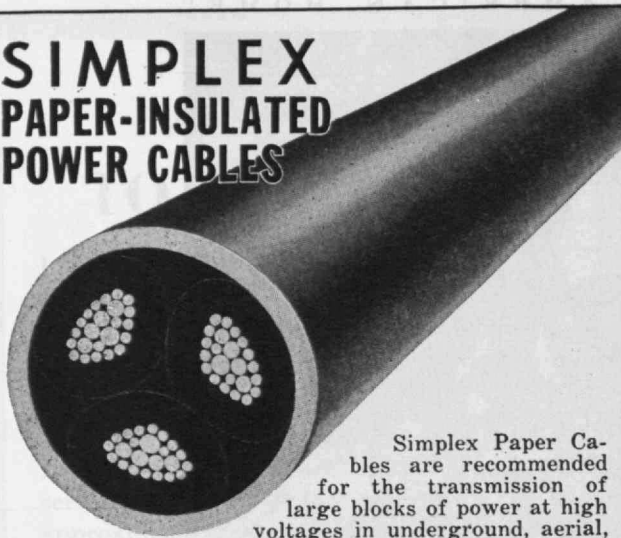
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HOW M. I. T. APPEARS TO AN OUTSIDER ON THE INSIDE

(Continued from page 168)

Thus, I would say that M.I.T. is unique because:

1. There is a definite limitation of what we attempt to do, which puts us in a class with the wealthiest institutions in the world, though we are some distance from the top in actual endowment. Who would suggest that M.I.T. trade 10 of the best engineering and five of the best science departments in the world for third-rate departments in these fields, plus a second-rate law school, school of education, and dental college?

2. The undergraduate body is preselected for professional interest and promise because of the very nature of the school; it is then further selected by a rigorous admissions system, and those admitted are worked much harder than is customary in most colleges. It is difficult to appreciate the real differences between institutions which exist in this regard without actually passing through them oneself.

3. There is a co-operative spirit among the departments and faculties of the Institute which arises partly from the limitation of endeavor to engineering, scientific, and associated fields; partly from the sharing of lecture halls and the integration of buildings; and partly from the unity of direction of the Institute from an administrative standpoint.

Considerations of this sort lead one to believe that prime desiderata for continued growth in excellence of the Institute are: avoidance of over-expansion; the finding of the proper emphasis of applied science between fundamental science and engineering; the maintenance of unexcelled standards of teaching and research; and far from least, "rendering," to use a familiar architectural term.

I once wrote a paper about a vacuum spectrograph, and hunted around for a student who could draw suitable illustrations for scientific publication. The Section of Graphics had no one to recommend at the time, so I got a boy from the School of Architecture. After he had completed some very nice drawings, he asked me if he shouldn't "render" them. When I didn't understand, he explained that this meant putting trees and shrubbery around the instruments, to make them look nice. Dean Baker has emphasized how much this sort of thing is needed around the Institute, and you have all had a chance to see the beginning steps that have been taken toward "rendering" our surroundings more habitable.

A scientist always tries to look at all possible alternatives. Suppose we cannot raise \$20,000,000 for the Institute; what shall we do then? One possibility would be to sell the Institute; I feel sure that the University of Massachusetts would pay \$10,000,000 for the plant. This, added to Horace Ford's endowment figures, would give us about \$50,000,000 to distribute among the Alumni, or roughly \$1,500 per Alumnus. Possibly, Mr. Dalton, who heads our Financing Development Program, might like to write every graduate of M.I.T.

(Concluded on page 192)



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FUNDING M. I. T.'S INDEPENDENCE

(Concluded from page 164)

I think it was G. K. Chesterton who once remarked of a reformer who was also an optimist that he felt the world to be so good that it must be made better. I would apply this paradox to my own feeling about M.I.T. Because we are strong, we must be still stronger. We cannot stand still. No institution, particularly no educational institution, can be static and remain strong. Francis Bacon long ago generalized this principle. "That which man altereth not for the better," he observed, "Time, the great Innovator, altereth for the worse." If we are to keep this institution strong, we must constantly adjust its program to new needs and new conditions; we must constantly be seeking to make it a better institution.

These are some of the basic considerations which underlie our Development Program. I believe that they warrant and command the assistance of all who value and love this institution. I believe that the successful prosecution of our Development Program will not only result in the continuing vitality of M.I.T. but that it will be a beacon light of encouragement to all privately endowed institutions, the bulwarks of our educational system.

It was William Barton Rogers, our founder, who stated the case better in 1863 than it has ever been stated since, when he wrote: "I am sure that I speak from no impulse of mere enthusiasm when I say that this new undertaking presents an opportunity of practical beneficence in connection with education which is not only peculiar but without precedent in this country. My experience as a teacher and my reflections on the needs and means of industrial instruction assure me that this enterprise, when truly understood, must command the liberal sympathy of those who aim to make their generosity fruitful in substantial and enduring public good."

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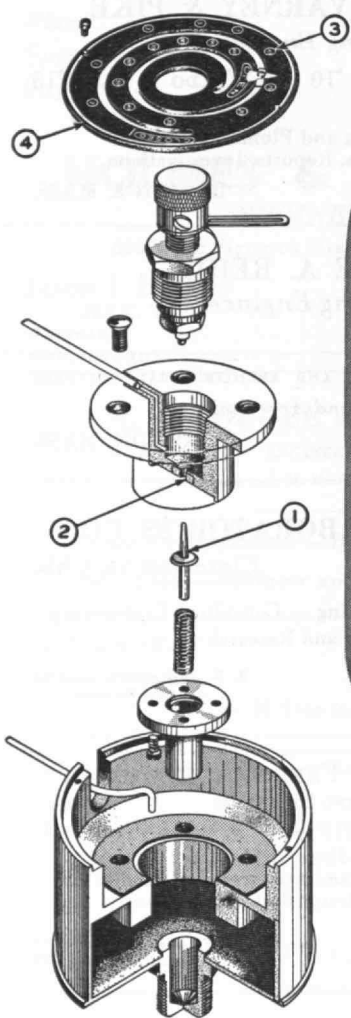
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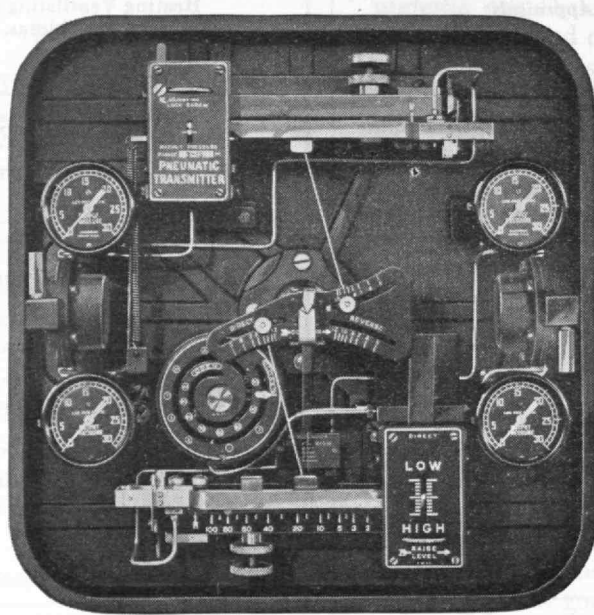
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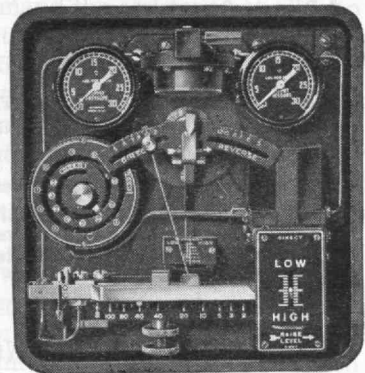


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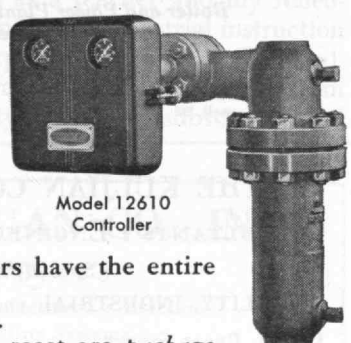
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WHOSE JOB IS IT?

The M.I.T. Alumni Fund is your concern. It is operated by Alumni and supported by Alumni for the benefit of the Institute. And since anything which enhances the prestige of the Institute, or which makes its operation more effective reflects directly upon the Alumni, present and future, the Fund may logically be said to be of direct benefit to the Alumni themselves.

The Fund organization consists of a Fund Board and an active, conscientious group of Class Agents. They are giving their time and energy to make the Fund an increasingly important part of Institute financing. During its short life they have accomplished much. You are one of those who have backed up their efforts. You have shown your appreciation of the importance of and necessity for this annual program of giving by direct participation. However, there are many Alumni, some of them every bit as loyal in other respects, who have not yet taken an active part. Whose job is it to see that they do? Is it fair to consider it the sole responsibility of that handful of Alumni who are already doing so much? Or is it logical to expect all Alumni who have come to a realization of the Fund's importance to consider themselves members of a committee of the whole to broaden the base?

If every man who has given to this year's Fund should influence one other Alumnus to do likewise, this would be the year of years. There is still time. The Fund year ends on March 31. You have done your part directly. Will you now accept this indirect responsibility? M.I.T., its students, and its Alumni will benefit by your efforts, and the Fund Board and Class Agents will be everlastingly grateful for your two-fold backing.

Alumni AND Officers IN THE News

IN PRINT

• THOMAS C. DESMOND'09 is the author of an article in the November, 1948, issue of *The Standard*, "Industry Needs the Older Worker." In the same issue of *Best Years* he wrote, "You Are Younger Than You Think."

• JOSEPH H. KEENAN'22 is listed on the contents page of the December, 1948, issue of *The Scientific Monthly*, having contributed "Definitions and Principles of Dynamics," printed from a lecture presented by Professor Keenan at Purdue University in 1948.

• FRANKLIN G. TYZZER'24, L. G. Ramer and J. E. Ancell contributed the paper, "Improved Sound Transmission Measuring Technique," on November 4 at the 36th meeting of the Acoustical Society of America at the Hotel Statler, Boston.

• FELIX BARDACH'27 wrote of three important characteristics used to analyze and control the dynamic cost fluctuations of a business in his article, "Graphical Method for Finding the Break-Even Point," published in the November, 1948, issue of *The Office*.

• PRESCOTT D. CROUT'29 has written

"An Extension of Lagrange's Equations to Electromagnetic Field Problems," a paper which was printed in the November, 1948, issue of the *Journal of Applied Physics*.

• LEWIS P. REITZ, JR., '37 was also a contributor on the program of the Acoustical Society of America on November 4. The title of Mr. Reitz's paper is "Automatic Transducer Response Recording with a Standard Comparison Microphone."

• Contributions to the 33d annual meeting of the Optical Society of America, held in Detroit, Mich., on October 21, 22 and 23, were made by the following: BRIAN O'BRIEN'19 and E. Dickerman O'Brien, "Variation in Sensitivity among Cones in the Human Fovea, and the Hecht Theory of Visual Acuity," and "A Test of Ocular Tremor and the Scanning Theory of Visual Acuity"; RALPH M. EVANS'28, "Seeing Light and Color"; CHARLES W. RANKIN'31, "The Spectrographic Determination of Fluorine in Organic Substances"; WILLIAM C. MILLER'33, "A New Spectrophotometer Employing a

Glass Féry Prism"; JOHN STERNER'33 and Jacob H. Jurmain, "Stainless Steel Analysis with the Direct Reading Spectrometer"; DAVID L. MACADAM'36 and W. R. J. Brown, "Visual Sensitivities to Combined Chromaticity and Luminance Difference"; ROBERT E. HOPKINS'37, John C. Evans and Donald Feder, "Curved Field Lens and Camera"; MILTON GREEN'40, "Three-Line Method of Obtaining Characteristic Curves for Heterochromatic Photometry"; J. RAND McNALLY, JR., '41, "A Preliminary Investigation of the Spectra of Uranium Isotopes"; ROBERT L. SINSHEIMER'41, JESSE F. SCOTT'48, and JOHN R. LOOFBOUROW, Staff, "Ultra-violet Absorption Spectra of Biologic Compounds at Low Temperatures"; ELIAS BURSTEIN'43, "The Infra-Red Properties of Polar Crystals"; BENJAMIN S. PRITCHARD'44 and H. Richard Blackwell, "An Automatic Presentation, Recording, and Analysis Device for Vision Experimentation"; JAMES C. ANDERSON'48 and GEORGE R. HARRISON, Staff, "Photoelectric Determination of Interference Maxima."

PLATFORM PRONOUNCEMENTS

• STUART CHASE'10 discussed inflation on October 31 at Ford Hall Forum in Jordan Hall, Boston. His subject was "Boom or Bust? Can We Smooth Out the Business Cycle?"

• DAVID O. WOODBURY'21 gave an illustrated lecture on "Atomic Energy for Better Living and Better Health" on November 18 at Kennebunk, Maine.

• GEORGE CALINGAERT'23 took part in the "Green Lights" program on October 13 from the studio of WWJ—The Detroit News. His subject was "The Sciences Open the Door for Youth."

• E. WILLARD GARDINER'25 addressed members of the Boston chapter, National Office Management Association on the topic, "Doing the Job Quicker, Easier, and More Effectively," on October 27.

• FREDERIC W. NORDSIEK'31 told the Food and Nutrition Section of the American Public Health Association "How Processing Effects Nutritive Values of Grain Foods" at their 76th annual meeting on November 9 in Boston.

• DONALD B. SINCLAIR'31 reported "A New Method for Measuring the Prod-

uct of Two Voltages Using a Single Vacuum Tube" at a meeting on November 18 of the Boston Section of the Institute of Radio Engineers at Harvard University.

• EDWIN R. GILLILAND'33, Professor of Chemical Engineering, reviewed recent developments in synthetic rubber manufacturing at the first meeting of the newly established division of the chemistry of rubber and allied substances of the Northeastern Section, American Chemical Society on October 21 at the Institute.

DEVELOPMENT PROGRAM

• At the November 19 luncheon inaugurating the Committee on Financing Development, 300 Alumni from all parts of the country heard of the Institute's plans for fulfilling its postwar responsibilities. JAMES R. KILLIAN, JR., '26, President of the Institute, addressed the members on "Funding M.I.T.'s Independence." The theme of the afternoon session was "Priority Needs as Set Forth by the Survey Committee." Members of the Institute's Administration discussed specific needs

of M.I.T. in diverse categories. EVERETT M. BAKER, Dean of Students, spoke on "Student Living, Welfare and Recreation"; JOHN C. SLATER, Head, Department of Physics, on "Nuclear Science and Engineering, and Electronics"; THOMAS K. SHERWOOD'24, Dean of Engineering, on "Gas Turbine, Hydrodynamics, Metals Processing, Supersonic Wind Tunnel"; WILLIAM L. CAMPBELL'15, Head, Department of Food Technology, on "Biology and Food Technology"; JOHN E. BUR-

CHARD'23, Dean of Humanities, on "Auditorium, Library, Humanities, and Faculty Club"; HORACE S. FORD, Treasurer, on "Endowment and Operation"; and a summary was made by JOHN R. MACOMBER'97, Chairman, Survey Committee. Addresses were given at the dinner that evening by ALFRED P. SLOAN, JR., '95, Honorary Chairman; and KARL T. COMPTON, who spoke on "M.I.T.'s Duty in the Years Ahead."

• Arnaud C. Marts, President, Marts

and Lundy, Inc., and JOSEPH J. SNYDER '44, Assistant Treasurer, spoke on "The Overall Plans for Raising \$20,000,000" and "Support by Industrial Corporations," respectively, at the morning session on November 20, followed by the introduction of and brief address by the subcommittee chairmen as follows: THOMAS D'ARCY BROPHY '16, Chair-

man, and GEORGE I. CHATFIELD '28, Member, Committee on Public Information; H. B. RICHMOND '14, Chairman, Committee on Alumni Participation; WILLIAM L. CAMPBELL '15, Chairman, Committee on Projects; HORACE S. FORD, Chairman, Committee on Resources; FRANK B. JEWETT '03, Chairman (not present) and ALEX-

ANDER MACOMBER '07, Member, Committee on Foundations; PHILLIPS KETCHUM, Chairman, Committee on Bequests; and JOHN E. BURCHARD '23, Chairman, Committee on Convocation. GEORGE R. HARRISON, Dean of Science, addressed the members at a luncheon Saturday afternoon on "How M.I.T. Looks to an Outsider on the Inside."

COMMENDABLE ACHIEVEMENTS

• CHARLES BITTINGER '01, Captain, U.S.N.R., "for his achievement in the field of Art, for his research into color, and the excellence of his paintings based on the fundamental principles of Art as outlined in the resolution," was presented with the first Benjamin West Clinedinst Memorial Medal in June at the Virginia Military Institute by the Artists Fellowship, Inc.

• EDGAR E. HUME '21, Brigadier General, U.S.A., a conquering hero of one of man's dread wartime enemies, typhus, received the Gorgas Award at the annual dinner of the Association of Military Surgeons in San Antonio, Texas. General Hume was presented with the medal and a \$500 cash award and was cited as the man who first used DDT on a mass scale to check the ty-

phus epidemic raging in Naples, Italy.

• GLEN C. WILLIAMS '42, Associate Professor of Chemical Engineering, "in recognition of outstanding civilian service rendered to his country during World War II," received the Army-Navy Certificate of Appreciation on December 14 at the New Lecture Hall, Harvard University.

ALUMNI IN SOCIETY NEWS

• The American Public Health Association held its annual meeting in Boston this year during the week of November 8, and a breakfast meeting of Alumni actively engaged in public health work was held at the Hotel Statler on November 11. The following Alumni were present: 1894: SAMUEL C. PRESCOTT; 1900: JOHN L. PORTER; 1904: WARREN U. C. BATON; 1909: GEORGE T. PALMER; 1911: THEODORE J. LAFRENIERE; 1912: ANDREW F. ALLEN, FRANK J. OSBORNE; 1916: JOEL I. CONNOLLY, AIMÉ COUSINEAU, HOWARD W. GREEN, MURRAY P. HORWOOD; 1917: W. THURBER FALES, CLAIR E.

TURNER; 1919: LOUISE P. HORWOOD; 1921: ALFRED H. FLETCHER; 1923: ELIZABETH C. NICKERSON, BERNARD E. PROCTOR; 1926: MRS. CLAIR E. TURNER; 1928: STEWART H. NEWLAND; 1930: HENRIK M. C. LUYKK; 1931: FREDERIC W. NORDSIEK; 1932: JOHN T. R. NICKERSON; 1933: VIVIAN C. DRENCKHAN, SAMUEL H. HOPPER; 1934: ANDREW T. DEMPSTER, B. RUSSELL FRANKLIN, ANNA C. GELMAN; 1936: ARIEL A. THOMAS; 1937: GEORGE O. TAPLEY; 1939: LOUISA J. ESKRIDGE, HOWARD W. LUNDY; 1940: SAMUEL A. GOLDBLITH; 1941: HOLBROOK A. BOURNE, MARIE FORTUNATI,

ELIZABETH E. MARKS; 1942: ERNEST H. BLAUSTEIN, ERNEST M. KENYON; 1943: MARGARET M. BLIZARD, SOL S. LIFSON, BERYL J. ROBERTS; 1944: LEO CRAVITZ, WARREN H. SOUTHWORTH; 1947: LEON W. WEINBERGER; Staff: CLAIR N. SAWYER, and WILLIAM E. STANLEY.

• HARRY W. PIERCE '26 was installed as a vice-president of the American Welding Society at the annual meeting of the Society at Philadelphia during the week of October 24.

• WILLIAM W. NEWTON '33 is president of the Dallas (Texas) Geophysical Society.

OBITUARY

* Mentioned in class notes.

WILLIAM A. CHAPMAN '85, October 29.*
WALTER I. TOWNE '88, September 24.
BOWDOIN B. CROWNSHIELD '89, August 12.
NATHAN DUFFEE '89, October 6.
CHARLES H. HANINGTON '91, September 10.*
HENRY C. DRESSER '92, October 31.*
EDWARD C. HALL '92, November 20.*
RICHARD MOREY '95, date unknown.*
CHARLES F. TILLINGHAST '95, October 3.*
A. LEBARON RUSSELL '96, October 6.*
J. LLOYD WAYNE, 3d, '96, October 10.*
KLAUS J. STEINER '97, October 4.*
CLIFFORD M. BALKAM '99, May 14.*
GEORGE W. PIGMAN '00, June 30.*
SIDNEY F. ROSS '00, May 31.*
ALBERT P. STOCK '00, September 26.*
CHARLES A. WHITEMORE '01, September 4.*

E. LEROY BRAINERD '02, October 10.*
RALPH E. KIMBALL '02, February 2.*
GEORGE W. BATEMAN '03, April 13.*
ROGER A. BURR '03, July 19, 1945.*
L. FRED MYERS '03, October 22, 1947.*
LUCILE E. SARGENT '03, January, 1948.*
ALEXANDER J. SCHOLTES '03, July 22.*
RICHARD C. TOLMAN '03, September 5.*
LAWRENCE H. UNDERWOOD '03, June 26.*
CHARLES F. BARRETT '04, September 14.
FOREST O. SPRAGUE '05, January 20, 1948.*
ROBERTS S. FOULDS '05, June 20.*
HANS F. SCHAEFER '05, September 19.*
FRANK S. HAMILTON '07, July 6, 1947.*
WILLIAM E. KERSHAW '07, October 29.*
HOWARD J. MORTON '07, April 30.*
EDWARD E. ALLEN '08, May 11.*

GEORGE E. DALRYMPLE '08, October 9.*
WILLIAM E. HAUGAARD '10, September 16.
BERTRAM S. FENNER '12, in 1946.
JOHN BLATCHFORD '13, March 11.*
RAYMOND E. PALMER '13, August 26.*
EARL S. PARKER '14, March 5.*
GEORGE M. LOVEJOY, JR., '17, November 17.*
GEORGE P. GAIL '19, May 1.*
RAY POWERS '19, September 7.*
GEORGE H. CROCKER '20, July 8.*
FRANK D. WILCOX '20, April 18.*
RAY PATTEN '21, September 13.
GEORGE T. GILMAN '23, September 18.
WILLIAM G. HITCHCOCK '24, April, 1947.
ELLIOT P. REXFORD '26, October 16.
Y. SUBBA ROW '26, August 9.*
DAVID CHIN-PARK '39, November 4.

News FROM THE Clubs AND Classes

CLUB NOTES

Atlanta Alumni Association of the M.I.T.

The Association held its annual baked bean dinner on October 16 at the home of Charles A. Smith '99 in Decatur, Ga. The good old Boston baked beans, always succulent and refreshing, with red-hot brown bread, coleslaw, pickles and suitable liquid refreshment were greatly enjoyed by all. After ravenous appetites had been satisfied, Leon B. Locklin '28, retiring President, called an election meeting. Our genial host, Charles A. Smith '99, was elected president by a unanimous vote.

The following Alumni attended: Arthur K. Adams '13, Roger W. Allen '27, Edgar Andrews '45, Russell J. Brooke '33, Douglas W. Coe '21, Richard L. Gatewood '25, Lloyd Gensel '24, Alfred J. Kroog '22, Leon B. Locklin '28, Frank O. Nottingham, Jr., '37, Clifford S. Read '18, Clarence B. Rogers '14, Elmer E. Sanborn '22, Charles A. Smith '99, and Lawrie H. Turner '99. The ladies participating in the festivities included Miss Ruth Meadows and the Mms. Adams, Coe, Foote, Gatewood, Gensel, Hess, Kroog, Locklin, Nottingham, Read, Rogers and Sanborn. Later in the evening, an excellent moving picture of the Shrine convention was exhibited.

After 40 years of faithful and efficient service, Charles A. Smith '99 retired on July 1 from active duty with the Georgia Power Company. During the greater part of his active professional career, Mr. Smith contributed a large share of his time and efforts to the affairs of the American Transit Engineering Association, the predecessor of the American Transit Association Way and Structures Division. During the Association year 1934-1935, Mr. Smith made an outstanding contribution to transit engineering through his service as president of the American Transit Engineering Association. All those who have associated with Mr. Smith carry with them the same feeling of respect and admiration for his professional abilities and his cheerful philosophies of life. — LAWRIE H. TURNER '99, Secretary, 625 Sherwood Road, North-east, Atlanta, Ga.

M.I.T. Association of Buffalo

At the February, 1948, meeting the Club elected a Board of Directors consisting of Walter W. Bird '34, Marvin Gorham '93, Matthew N. Hayes '36, Gabe Hilton '15, Bernard H. Nelson '35, James F. Patterson '36, and Walter H. Sherry '37. The Board had its first meeting in July, at that time electing Nelson as president, Sherry as vice-president, and Hayes as secretary-treasurer. Plans were then set

up for the coming fall-and-winter season meetings. The first get-together "with a stein on the table and a good song ringing clear" was a stag picnic held early in September at the summer home of Roswell E. Pfohl '17. The outing was attended by approximately 35 Alumni and was considered a success in spite of rain. In October, approximately 60 members attended an excellent dinner at the Supervisors' Club and, following dinner, were conducted on a tour through the Bethlehem Steel Company strip mill in Lackawanna, N.Y. Arrangements for the visit were made through the courtesy and co-operation of Gordon Cushman '22.

Among those present were: Ralph D. Bates '14, Herbert J. Beierl '15, Joseph Bergantz '41, Walter Bird '34, Robert L. Black '45, John Bowman '20, Howard E. Britton '38, R. S. Brookman '35, Earl D. Brown '23, Benjamin Buerk '30, Roy Burgwardt '48, George J. Chambers '12, Albert Chestnut '39, W. O. Christy '31, Joseph J. Deptula '48, R. E. Dow '01, George J. Easter '15, Joseph M. Engel '37, Edgar Faelten '38, J. Harold Genrich '31, Mallory Graves '36, Theodore Green, Jr., '30, Theodore Gundlach '40, Matthew N. Hayes '36, John M. Hendrich '42, Gabe Hilton '15, A. E. Hittl '36, Lester F. Hoyt '13, E. F. Izard '29, Lee H. Jones '16, John H. Keefe '47, Alan W. Ker '47, R. K. Koegler '36, Israel Lenzner '43, R. C. Long '38, E. H. McCormick '32, W. D. MacDonnell '34, W. R. McEwen '15, Barrie MacKenzie '43, G. W. Mahlman '48, Daniel C. Mitchell '34, Harold D. Mitchell '12, B. H. Nelson '35, D. H. Nelson '47, W. P. Overbeck '34, Joseph J. Parks '43, Philip S. Perch '47, R. B. Rumsey '43, J. R. Ryan '31, Walter Sherry '37, Thomas H. Speller '29, R. P. Stowers '26, Stanley A. Tirrell '41, Ehrler Wagner '37, D. G. Welch '26, David W. Whitcomb '42.

Early in December a Christmas dinner dance was held at the Troop I Post of the American Legion. Many acquaintances were renewed and new friendships established at our first meeting to which the ladies had been invited. Plans are under way for three more meetings to complete the year's program. — MATTHEW N. HAYES '36, Secretary, 45 Manchester Place, Buffalo 13, N.Y.

M.I.T. Association of Cleveland

The first meeting of the 1948-1949 alumni year was a complete success as can be supported by the enthusiasm of the 120 Alumni, wives and friends who turned out for the dinner meeting on Tuesday evening, November 16, at the University Club. Mrs. Frances P. Bolton, Congressman (Congresswoman, as President Bill Loesch '21 felt she should be called) from the Ohio 22d District was our most welcome guest. Mrs. Bolton is one of the outstanding women of our time and will undoubtedly continue to give great support to our National Government. Her talk

certainly indicated her familiarity with the affairs of Congress and the Nation. By requesting checks with the return reservation cards we were able to assure ourselves of a good attendance. It was interesting to note that the first 34 reservations received included a reservation for the wife of the alumnus and included the advance payment. That was certainly an advance notice of the good spirit with which the combined husband and wife meeting was attended. C. Uluant '44 from Turkey was in attendance. He is currently at Nela Park in line with his association with International General Electric. Nela Park continues its international associations which always are of interest to Cleveland Alumni. Those who turned in their attendance cards were: 1910: Allen Gould; 1912: C. L. Dows, Arch Eicher, C. B. Rowley; 1913: Ken Reed; 1916: H. W. Ellis, H. W. Green; 1917: L. R. Westbrook; 1920: Church Reed; 1921: A. I. Bradley, Joe Gartland, Bill Loesch, F. E. Rhinehart; 1923: E. L. Akerley, W. F. Munford, Orr Stewart; 1924: D. E. Moore; 1926: Elton E. Staples; 1931: R. D. Knight; 1933: Dick Valentine; 1934: George Merryweather; 1936: V. J. Dobert; 1937: G. R. Young, Art Zimmerman; 1938: J. P. AuWerter; 1941: W. M. Folberth, Jr., Lew Fykse, J. W. Kraus, G. M. White; 1942: C. R. Jelm, Chuck Smith; 1944: W. D. Bowman, Bruce Fabens, R. F. Gamundi, Ernest Schoenwald, C. Uluant; 1945: J. J. Strnad; 1947: Walt Ericsson; 1948: Dick Asmus. — G. RICHARD YOUNG '37, Secretary, The Weatherhead Company, 300 East 131st Street, Cleveland 8, Ohio.

M.I.T. Club of Fairfield County

Approximately 44 Alumni were present on November 10 at the fall dinner meeting of the Club at the Hotel Barnum in Bridgeport. It was a very rainy night and the fellows from Stamford, Norwalk, and Danbury demonstrated real stamina to make the trip. Thomas M. Shock, Rear Admiral, U.S.N., retired, spoke on combat operations in the Pacific during World War II and was most generous with informal remarks on current conditions in the Far East.

Those present were: Fred Mathesius '02; Nate Seeley '11; Ham Merrill '12; Phil Covitt, E. C. Hadley, Walt Hauser, and Howard Stone '14; Dick Berger and John Hood '16; Less Hoffman '17; Philo Shelton '18; Randy Haigh and Lloyd Raymond '22; James Brackett '23; Dave Sullivan '24; Luke Lucas '27; Paul Baker '29; Tony Savina '30; Tigris Kazandjian '31; Fred Green '32; Ernie Greenwood, Bill Leete, Charlie Lucke, and Ed Wemple '34; Bart Chapman '35; Gus Mackro '36; Bill Mott and Dud Swain '37; Dick Christie, Phil Epifano, Stu Paige, Russ Schiffmann, Don Waterman, and Abe Zimmer '39; Paul Alberti, Ed Seim, and Bart Weller '40; Bill Foley, Jack Madwed and Phil Mar-

silius'42; Andy Burns'46; John A. Cornell and Jim Meehan'47; and Francis Miller'48.

To serve in place of Zay Curtis'35, who has moved to Fostoria, Ohio, Gil Mott'37, has been chosen secretary of the Club. It is planned now to have a late winter dinner at which it is hoped to match or exceed the attendance of 115 a year ago. — J. BARTON CHAPMAN'35, *President*, 7 Lalley Boulevard, Fairfield, Conn.

Indiana Association of the M.I.T.

Club officers for the coming season were installed at the first meeting of the Association at the Apex Grill in Indianapolis on October 21. John Babbitt'17 will serve as president with Sam Hopper'33 as vice-president. After a prime ribs dinner, the group of 15 members who attended were enlightened on the organization and services of the United States Employment Service by Samuel Springer, the local director. Members of the Class of '23 dominated the session.

All present were grieved to learn of the death on October 10 of J. Lloyd Wayne'96, our senior and most active member. — Lowell Holmes'23, has been elected for placement service and can be addressed at Management Research Associates, 635 North Pennsylvania Street, Indianapolis 4, Ind. — HARRY C. KARCHER'25, *Secretary*, 320 West 43d Street, Indianapolis 8, Ind.

M.I.T. Club of the Miami Valley

As reported in the last set of notes our Club now has a new reporter. What Gene Herzog'27 failed to report was the grand job he did in getting the Club reorganized after the War. He deserves a vote of thanks from us all.

The last dinner meeting of the 1948 series was held on May 18 at the Engineers Club. R. E. Robillard'20 of the Frigidaire export division gave a very interesting talk on the many problems facing exporters today. He mentioned the basic reasons for England's dollar shortage. As his guests, he introduced D. Bennione Brown of the A.C. Spark Plug Company, Sheffield, England; Ove Falk Holm, Norsk Staaltavlg Fabrik, Trondheim, Norway; and C. B. Carlton, General Motors Holdings, Ltd., Melbourne, Australia. Each of these guests spoke briefly on business conditions in his own country. The comments were especially interesting since they came from the business men themselves rather than secondhand through the pages of newspapers and periodicals.

The 1948-1949 series of monthly dinner meetings got off to a fine start on October 29 at the Engineers Club. Our speaker was Mayor Louis B. Lohrey, known in Dayton not only in his official capacity but also as a consultant at Delco Products. The Mayor dwelt briefly on Dayton's city charter form of government. The legislative body is the city council composed of five elected members, one of whom is mayor. Under the city council is the city manager. He is a hired administrator whose function is to administer the laws passed by the council and to supervise the operation of the many depart-

ments of a modern city. Mayor Lohrey stated that one of the difficulties in modern city management is the lack of the engineering approach to its problems. For example, the members of the city council of Dayton come from all walks of life and are not familiar with all the aspects of problems which may arise. Therefore, they must accept the recommendations of the city manager who must, in turn, rely on his subordinates' recommendations. This can bring unhappy results.

Another spot for the engineering approach is the bridge repair and replacement program in Dayton. When Mayor Lohrey took office, plans had been prepared by the city engineering department for bridge construction but the city could not get any contractors to bid. Upon investigation, it was found that the designs were uneconomical, requiring too much concrete and contractors refused to submit bids. Other aspects of city planning in Dayton which require engineering study are traffic congestion, expansion of the municipal airport, installation of railway overheads, modernization of building codes, recreational facilities and installation of a water softening plant. In summary, Mayor Lohrey said that Dayton needs groups of engineers who are interested in specific projects and who would give time and energy for advisement to the city council. All present agreed. In fact, Luzern Custer'13 was quite vociferous in stating that he had been trying for years to get Dayton engineers interested in just such work. Perhaps Mayor Lohrey's talk was the spark that is needed.

A short business meeting preceded the talk. Meeting places and dates and subjects for future programs were discussed. We were a little late getting started this year so the date of the next meeting was left to the discretion of the club President. — JOHN T. SHUTACK'43, *Secretary*, 515 Telford Avenue, Dayton 9, Ohio.

M.I.T. Club of Milwaukee

The Club opened the 1948-1949 year with a meeting at the Brown Bottle of the Schlitz Brewery on October 29. Kenneth E. Vaillancourt of the Milwaukee Public Museum gave a very interesting and colorful talk on vacation possibilities in the state parks and forests of Wisconsin. His talk was illustrated by a movie in color. — CHARLES L. SOLLENBERGER'44, *Secretary*, Allis-Chalmers Manufacturing Company, 924 East Wells Street, Milwaukee 2, Wis.

The M.I.T. Club of New York

By the time you read this, the holidays will have come and gone, and again we will be settled down for come what may in the way of winter; and the fortunes of a new year. May all of your fondest hopes turn out to be facts, and may you continue to patronize our facilities at the Architectural League, 115 East 40th Street.

Since at this writing, the biggest event of the year is "just around the corner," it is pretty hard for me to give many details herein. I can say that the reservations for the Compton, Killian, Dandrow banquet are coming in very satisfactorily, there al-

ready being about 200 on hand. We are expecting in the neighborhood of 500 in attendance, and I don't think we will be far off on our estimate. Larry Davis'22 and his committee have been putting in some hard work on the affair, and as to be expected, when he gets behind a movement something has to give. Dunc Linsley'22, Dave Minton'22, Buzz Burroughs'20, Lou Bruneau'38 and Sam Reynolds'22, Club President — each will contribute generously to the success of the affair. Larry instituted a new idea on this occasion by appointing key men from each of the classes to spark plug the attendance of their own classes. This has worked well so far and given us the opportunity to get better acquainted with other Alumni in the area.

Our club membership continues to hold its own very nicely; in fact, new members are again surpassing resignations. Your house committee is continuing its effort to either obtain our own facilities, or improve those which we are now lucky enough to have. But I again remind the disappointed house lovers that it takes a great many more members than we now have to swing our own property, and a much bigger patronage in the house by our members than we are now enjoying; or even did the entire time we shared quarters with the Williams Club on East 39th Street. — WILLIAM W. QUARLES'24, *Secretary*, McGraw-Hill Publishing Company, 330 West 42d Street, New York 18, N.Y.

M.I.T. Club of Philadelphia

The annual dinner meeting of the Club will be held in the ballroom of the Warwick Hotel at 17th and Locust Streets on Tuesday, January 18, 1949. The election of officers and members of the executive committee will be conducted as usual at this time. We are expecting to have with us Dr. and Mrs. Compton and Dr. and Mrs. Killian as guests of honor. All Alumni, their wives, and their guests are cordially invited to attend.

For information about Alumni in Philadelphia and vicinity, call Boulevard 0287. — SAMUEL K. MCCAULEY'41, *Secretary*, 288 Copley Road, Upper Darby, Pa. *Assistant Secretaries*: WILEY F. CORL, Jr.'39, Box 358, Bryn Mawr, Pa., WILLIAM H. PEIRCE'46, 532 East Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.

The M.I.T. Club of Quebec

Our Club opened its 1948-1949 season with a dinner meeting held at the Queen's Hotel in Montreal on October 22. We were privileged in having as our guest Dr. Karl T. Compton, Chairman of the Corporation of M.I.T., who gave us up-to-the-minute information about what was happening at the Institute and about his recent appointment as chairman of the Research and Development Board of the National Military Establishment. Dr. Compton's talk was an inspiration to everyone present, and all were relieved to know that he will continue to devote time to the Institute, working towards the fulfillment of one of his greatest ambitions; to secure more and more resources and facilities for Technology. The Presi-

dent of the Club, Harold C. Pearson'23, had brought a record player and everybody enjoyed hearing the record of M.I.T. songs.

Alumni present were as follows: H. A. Audet'45, A. J. Barnes'09, J. E. Bêique'20, M. E. Blanchard'48, Raymond Boucher'34, A. E. Bourbeau'27, T. L. Brock'38, H. S. Chandler'08, Aime Cousineau'16, L. J. T. Décary'05, R. A. Désilets'43, L. A. Fraikin'31, F. J. Friedman'08, Henri Gaudefroy'34, A. W. Germer'23, S. J. Hungerford'33, Wilfred Kaneb'43, T. J. Lafrenière'11, Jacques Laurence'40, E. H. McCann'38, G. K. Marshall'41, Huet Massue'15, F. D. Mathias'36, M. W. Maxwell'23, J. C. Merritt'16, Sol Nathanson'40, W. K. Nonnenman'36, R. D. Packard'26, H. C. Pearson'23, H. A. Rapelye'08, E. C. Richardson'07, A. D. Ross'22, F. P. Rousseau'27, E. G. Schoeffel'23, Rene Simard'28, M. O. Simpson, Jr.'47, A. A. Smith'31, A. T. E. Smith'21, E. E. Smith'30, D. J. Spence'97, R. S. Sproule'47, G. R. Taylor'20, S. C. Tsiang'38, Barton Wheelwright'10, G. L. White'23, H. R. Wiggs'22, T. W. Wlodek'47. — JACQUES R. LAURENCE'40, *Secretary*, École Polytechnique, 1430 St. Denis Street, Montreal 18, P.Q., Canada.

M.I.T. Club of Schenectady

The Club held its second meeting of the year at the Young Men's Christian Association on Thursday evening, November 18. President Joe Quill'41 opened the meeting by introducing Philip L. Alger'15, who set the tone of the evening by giving suggestions for club activity on behalf of the local school system, such as supporting and assisting investigations of the city planners into the need for a new high school, and building up local interest in the project. He cited the vocational high school of Milwaukee as worthy of attention. Mr. Alger then presented C. H. Crofoot, principal of Mont Pleasant Technical High School (the only technical high school in Schenectady at present), who added his remarks on the project. President Quill then introduced Fred P. Granger, Jr.'48 and Charles E. Rettig'48, both of whom are on co-operative course assignments at the Schenectady Works of the General Electric Company, and John R. M. Alger'49, whose Course VI-A work with the company has had to do with the study of lightning phenomena in the Empire State Building. These three men outlined the work involved in their respective positions. The principal speaker of the evening was Eugene W. Boehne'28, associate professor of Electrical Engineering at the Institute, who provided the group with a very interesting insight to the present workings of the co-operative courses in Electrical Engineering, and mentioned the new (to us, at any rate) combined colleges plan, and other items of interest from Cambridge. His talk was immediately followed by a lively discussion period, evidence of the general interest in his presentation. Prior to the meeting, a few of the club members met with Professor Boehne for dinner at the Hotel Van Curler. Members at the meeting were: R. C. Robinson'01, Nathaniel Sprague, Jr.'02, P. L. Alger'15, E. H.

Banker'18, H. W. Bibber'20, D. C. Jackson, Jr.'21, L. H. Dee'35, D. C. Jackson, 3d'40, I. W. Collins'41, J. S. Quill'41, B. C. Thorn'41, E. B. Judd'42, W. B. Rodeman'44, and W. N. Coffey'47. Guests were J. R. M. Alger'49, F. P. Granger, Jr.'48, C. E. Rettig'48, Shirley R. Collins, C. E. Crofoot, and L. T. Rader. — IVOR W. COLLINS'41, *Secretary*, General Electric Company, Building 56-201, 1 River Road, Schenectady 5, N.Y.

M.I.T. Club of Southern California

Club members gathered on November 8 in the Skyroom at Lockheed Air Terminal for their annual fall meeting. A special program dealing with aircraft subjects was prepared by the Secretary. Hall Hibbard'28, chief engineer of Lockheed Aircraft Corporation, made the introductory remarks and William W. Hawkins, preliminary design engineer of Lockheed, addressed the group on the subject, "Airplane Design, A Specialist's Paradise." Tony LeVier, Lockheed's chief test pilot, was on hand to show equipment for high altitude flying. Families and friends of Alumni were invited to the meeting which was preceded by a special showing of a P-80 jet plane. — HIRAM E. BEEBE'10, *Secretary*, 1847 North Wilcox Avenue, Hollywood 28, Calif.

Washington Society of the M.I.T.

The October meeting of the Society at Barker Hall on November 3 proved to be of unusual interest to the members. The subject was "Shaped Charges." Vice-president Bob Thulman'22, presided and introduced the speaker after dinner by telling of collegiate jargon among the younger members of his family. His daughter, he reports, refers to a particularly attractive boy friend as a "large charge," while his son, an undergraduate at the Institute, knows a well-formed date as a "shaped charge." Colonel Claudius H. M. Roberts'17, the Army Ordnance expert on development of shaped charges, thereupon developed the subject, but not along undergraduate lines. The speaker referred to gunpowder of various sorts formed into a shape such that damage to steel or concrete structures is focused and magnified by the configuration of the powder. Although the principle of the shaped charge was known and described in Norway 150 years ago, not until after World War I did intensive developments in shaped charges take place. Patents had been obtained nearly concurrently in England and Germany in 1911 and 1912. While a simple block of powder detonated against a steel plate will dent or dish the plate, the same powder hollowed into a cone on the side against the plate and lined with a sheet metal cone will drive a hole in the plate without denting or changing the shape. The shape and proportions of the cavity in the charge determine the effectiveness of device.

The phenomenal power of the shaped charge is explained by the "Monroe Effect" on which information was first published in the 1880's. The force of the detonation progressively constricts the air

and liner of the cavity and creates a jet of metal traveling at a prodigious speed and backed up for an instant with tremendous pressure initiated by the explosion and re-enforced with Mach reflections producing a tenfold enhancement of pressure. Army Ordnance has measured the pressure which rises to five million pounds per square inch while the jet is traveling at 60,000 feet per second. The hole punched in steel plate bears the appearance of a cutting torch hole although the temperature produced is nominal. The code word *HEAT* applied to ammunition developments involving shaped charges during the War is not an indication of temperature but means "High Explosive Antitank."

Bazooka ammunition is the most popular use of shaped charges where four or five inches of armor are penetrated regularly. A curious fact about a plate bearing a hole made by a shaped charge is that it weighs no less than before the hole was made. Colonel Roberts said that the jet appears to produce no reaction. He compared the action to propelling a watermelon seed by squeezing it out from between the fingers. The speaker developed the subject to include shaped charges modified to industrial applications where shafts and pipes are cut off by powder blasts and oil-well casings are perforated for underground. Felling trees by shaped charges is a simple and practical application of this phenomenon where a large tree can be severed in a fraction of a second. Although present and future work on this subject is classified, the Colonel stated that the Carnegie Institution is studying the enormous pressure effects produced by shaped charges as part of its postwar research program.

Present were: G. L. Arnold'30, H. M. Baxter'17, A. D. Beidelman'15, A. F. Bird'30, Charles Bittinger'01, J. R. Bloom'30, W. V. Cash'24, L. W. Conant'21, F. H. Copeland'18, J. G. Crane'90, L. J. Grayson'19, A. M. Holcombe'04, J. Y. Houghton'26, F. A. Hunnewell'97, J. U. Jovelanos'43, W. K. MacMahon'23, H. D. Manuelian'18, G. E. Marsh'02, W. H. Martin'11, G. D. Mock'28, F. M. Moss'32, A. J. Perry'29, E. R. Pettibone'36, J. A. Plugge'29, E. S. Pomykala'23, H. D. Sheetz'42, C. H. Small'30, N. P. Stathis'29, C. W. Stose'93, W. P. Terrell'06, R. K. Thulman'22, F. P. Upton'16, R. W. West'32, W. E. Yelland'30. — JOHN A. PLUGGE'29, *Secretary*, 35 Oxford Street, Chevy Chase 15, Md. ALBERT F. BIRD'30, *Review Secretary*, 5070 Temple Hills Road, S.E., Washington 20, D.C.

The M.I.T. Club of Western Pennsylvania

The Club maintained what now amounts to a tradition by holding its annual outing and picnic at Joe Thistle's ('32) estate on September 16. Those in attendance included 41 members and six students now at the Institute as guests. Refreshments were preceded by such activities as horseshoe pitching, badminton, billiards, and tapping the keg. After an excellent buffet supper, the group participated in card games and general sociability. Those present were: 1903: E. H. Millard; 1919:

R. G. Lafean; 1922: John W. Church, John F. Robinson; 1923: E. M. Barnes; 1924: E. L. Chappell; 1925: Charles M. Boardman, Rufus N. Palmer; 1926: W. M. Davidson; 1927: Charles T. Barker; 1928: D. W. Dimock, Donald S. Fraser, George M. Hoffman, Fred P. Walden; 1932: B. M. Hutchins, Henry Rockwood, Joe Thistle; 1933: I. E. Madsen, Art Mason, Cal Mohr, R. C. Wellwood; 1934: R. F. Miller, Aaron Redcay, F. G. Richards; 1935: Bill Bates, Robert K. Kulp, G. C. Morrisette; 1938: Jack F. Chapin; 1940: Thomas F. Reed; 1941: C. F. Peck, Jr., C. D. Robson; 1944: Jud Cole, R. H. Horsburgh, Jr.; 1947: R. F. Carr, Paul G. MacNeill; 1948: George F. Clifford, Jr., R. Evans, William D. King, Gerard C. Lammers, Robert G. Schmidt; 1950: Jack E. Dresser; 1951: James W. Forgie, J. Carl Hill, 3d; 1952: Thomas K. Cauley, Charles M. Lockerby.

The second monthly meeting was held at the University Club, Pittsburgh, on October 18. The attendance comprised 29 members. After the customary excellent buffet supper, George M. Hoffman '28, entertainment chairman, presented the program for the evening which consisted of two motion pictures, "River Sand and Gravel" and "Money at Work." The first film was presented by W. W. Walker, sales manager, Keystone Division of the Dravo Corporation. Those in attendance included: 1904: W. U. C. Baton; 1909: H. L. Lang; 1914: Herbert H. Hall; 1916: Robert A. Miller; 1919: R. G. Lafean; 1921: E. A. Soars; 1923: E. M. Barnes; 1924: E. L. Chappell; 1925: Rufus N. Palmer; 1928: D. W. Dimock, D. S. Fraser, George M. Hoffman; 1933: R. C. Wellwood; 1934: A. K. Redcay; 1935: W. J. Bates; G. C. Morrisette; 1939: P. R. Toolin; 1940: W. K. Bodger, T. F. Reed; 1941: C. F. Peck, Jr.; 1943: L. K. Johnson; 1944: E. J. Cole; R. H. Horsburgh, Jr.; 1946: D. R. Longmire; 1947: P. G. MacNeill; 1948: E. J. DeVal, R. L. Evans, Jr.; R. W. Hindman, W. W. Walker, guests. — THOMAS F. REED '40, *Secretary*, 232 Maybrick Avenue, Pittsburgh 16, Pa.

CLASS NOTES

• 1885 •

William Albert Chapman, born in Malden, Mass., in 1861, died in Los Angeles, Calif., on October 29. He graduated from the Highland Military Academy at Worcester, Mass., and attended Croton Military Academy at Croton, N.Y., completing his education at Technology. In 1881 the freshman class was required to have military drill three times a week, and Chapman was first lieutenant and adjutant of the battalion. He was largely known for this at the Institute as he left soon after. In 1885 Chapman went to New Mexico, and in 1887 he settled in Raton to make his permanent home. There, for a time, he was connected with L. S. Preston in surveying the property of the Maxwell Land Grant. Governor Ross com-

missioned him in 1887 as first lieutenant and adjutant of the New Mexico National Guard.

Chapman's real interest was in the development of the public schools of New Mexico, and for many years he taught in the public schools at Elizabethtown, Catskill, and Pontil Park. Later, he became engaged in the insurance business in Raton, but always kept up his interest in the educational work of the state. He served two terms as county superintendent of schools of Colfax County and in 1909 was elected to the presidency of the Territorial Education Association. For many years he served as a member of the school board in Raton, and also as a member of the examining board of Colfax County. Chapman's interest in the development and unfolding of New Mexico as a territory from pioneer conditions and his association with early characters of fame and note gave him a reputation as a historical narrator before groups and clubs in New Mexico and Southern Colorado. He was very popular at Technology, and it was a pleasure to see him at our class reunion at Wianno and again at our 50th reunion at Wellfleet.

Redington Fiske, when sending in his annual donation to the Alumni Fund, wrote: "I have had an interesting and pleasant life in all parts of the United States and have finally been successful in connection with oil wells, which will accrue to my descendants." — ARTHUR K. HUNT, *Secretary*, Longwood Towers, Brookline 46, Mass.

• 1886 •

Among those not yet replying to my circular letter of last fall sent to all known living members of '86 M.I.T. and S.M.A. are the following: William C. Chase, 8 Marlborough Street, Boston; Charles E. Holmes, 40 Nahant Place, Lynn; James G. Langdon, Aurora, Iowa, in care of Mrs. W. J. Potwin; Herbert L. B. Lawton, 135 Forest Street, Medford; Fred M. McGraw, Gaithersburg, Md.; Howard B. S. Prescott, 75 Jason Street, Arlington 74; Fred A. Whitney, 97 Merriam Avenue, Leominster; and Vernor F. Worcester, 1½ Prescott Street, Sanford, Maine. The Secretary has written a second notice under dates of November 19 and 20 to the above, asking for some word as to their recent doings (or misdoings!) for publication in The Review, and suggests that if any member of '86 M.I.T. or S.M.A. knows anything about them, he communicate with me. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1888 •

The '88 luncheon at the Union Club in Boston on June 11, celebrating our 60th anniversary, went off finely, thanks to our host, Johnny Runkle. We had the choice of viands ranging from items on the menu to broiled live lobster or beefsteak. Eleven members of the Class were present: Bates, Bird, Ellis, Faunce, Hamblet, Linzee, Runkle, Sjostrom, Sweetland, Thompson and Webster. Our long-distance traveler was Herbert Bird, whose son-in-law drove from Elmira, N.Y., to New Hyde Park,

Long Island, to pick him up, bring him to Boston and drive him back to New Hyde Park after the reunion. One man, Dick Vose, wrote that he could not come, but to expect him on the 75th. Charlie Merrell expected to come up from Dunedin, Fla., but found that he could not leave home. The only fly in the ointment was the absence of our beloved Secretary to whom the Class sent greetings with regret that he could not be present.

In his report to the Class, our Secretary listed the number of members of the Class from the date of entry in 1884 up to June, 1948, as follows: Regular and special members of Class in the fall of 1884, 289; 1885, 199; 1888, 77 (regular only); 1938, 88; 1940, 85; 1941, 79; 1944, 60; 1945, 58; June, 1948, 52.

Nine members and wives or guests of the Class attended the Alumni Day Luncheon on June 12. The ordinary mortals partook of lunch under a large tent in Du Pont Court, but the distinguished classes of '98 and '88 were given rooms in the main building with special service. Five men attended the banquet at the Statler Hotel in the evening: Bird, Ellis, Hamblet, Runkle, and Thompson. Since neither the President nor Secretary could attend the banquet, the Assistant Secretary sat in splendor with representatives of the other five-year classes at the head table.

The high light of our class meeting on June 11 was the presentation by President Webster of a report on "The Trend of Affairs at Massachusetts Institute of Technology Prepared for Presentation to the Class of 1888." This report was prepared for us by Mr. Killian, who has since become the new President of the Institute, with the co-operation of Dr. Compton. The report is of so much interest, especially in view of the new drive for endowment and new educational facilities, that I am quoting quite liberally from it.

Mr. Killian states that the buildings now under construction at the Institute represent a total expenditure of \$8,600,000 which, in terms of dollars, represents the largest construction program in the history of the Institute, almost twice as much, in fact, as the original Cambridge buildings. Traveling along by the Institute on Memorial Drive, the driver notices along the river many buildings under construction, the largest of which is the new Charles Hayden Memorial Library located between the main educational group and Walker Memorial. Mr. Killian says: "This great structure, which will cost over three million dollars, will for the first time provide adequate library quarters for the Institute and will also add tremendously to the facilities needed for general education. It is hoped that the new building can be occupied by the fall of 1949. As the driver moves in a westerly direction along the river, the next construction project he will notice is the interestingly curved structure which is to be the Institute's new Senior House. This dormitory will house about 360 students and will provide complete living facilities, including dining services and adequate lounge and recreational areas. It has been designed by Professor Alvar Aalto of the Institute's own Architectural Department

and represents many advances in dormitory construction. It is interesting, too, that along with the many novel features of this building, the cost per student is less than in some structures built at other New England colleges to provide the same type of dormitory service.

"As our hypothetical driver continues along the river, he next passes by Westgate and Westgate West, the Institute's housing projects for married students, which provide accommodations for 270 families. This has been an extraordinarily successful project, and the families who live there consider it a privilege to be citizens of this little community. Just beyond Westgate West, the next great construction project is the new Supersonic Wind Tunnel, which is being built with funds provided by the Navy under an arrangement whereby the Institute will operate the Laboratory and Tunnel. This Tunnel will enable experiments to be conducted in air moving at a speed at least two and a half times that of sound, and some indication of the magnitude of the project is given by the fact that about 10,000 horsepower is required to operate the Tunnel. In addition to these new buildings along the river side of the Institute's campus, our driver, if he is curious, can discover other construction projects under way in various places about the Institute's property. Back on Vassar Street, behind the State Armory, he will see the new John Rockwell Athletic Cage. This structure will provide 33,000 square feet of indoor space for athletic use.

"On the far side of the Institute's campus, along its easterly border, still another building is getting under way—a new electrostatic generator for the study of the atomic nucleus. This great machine will be one of the major additions to our country's facilities for studies relating to atomic energy. This program is not confined to physical facilities alone, however. The Institute has been steadily improving its educational program and the new buildings are but a reflection of this fundamental advance. The extent of M.I.T.'s pace-setting and leadership is shown by many indices. There has been for example a steady flow of visitors and commissions from foreign countries to the Institute to observe its educational procedures and there are movements in several countries to establish institutions patterned after M.I.T. The Institute's student body likewise reflects its outstanding position. Its students come from every state. In fact, 70 per cent of them come from outside New England. It has, in its student body now, representatives from 46 foreign countries and its alumni occupy positions of influence in some 80 different countries at the present time. Reflecting the current shortage of scientists and engineers and the increasing importance of these men in our national life, the Institute is wholly unable at the present time to meet the demands for its graduates."

This description by Mr. Killian is of particular interest just at the present time because of the drive which is being inaugurated for an increase in resources by at least \$20,000,000. In fact, this report given the Class of '88 is an advance summary of the report of a committee of the

Corporation which has been studying the needs of the Institute.

The sum is designed, about one-half to be in the form of an endowment, and about half new educational facilities, new housing, better athletic and recreation facilities, and a great new library, all reflecting a steady trend of the Institute to broaden the base of technological education.

A national Committee on Financing Development of M.I.T., consisting of nearly 600 members, most of them Alumni, held its first meeting on Friday, November 19, to lay plans for the conformation of this objective. Your Assistant Secretary has been named by Dr. Compton as a member of the committee so that he attended the opening session to see the plan well under way.

The objective of this development is to insure the maintenance of M.I.T. as one of the leading institutions of science in engineering in the world. "An objective short of this," Mr. Killian adds, "would also be incompatible, I venture to suggest, with the standards of achievement established by its graduates, as typified by the distinguished Class of 1888."—BERTRAND R. T. COLLINS, *Secretary*, 291 Nassau Street, Princeton, N.J. SANFORD E. THOMPSON, *Assistant Secretary*, The Thompson and Lichtner Company, Inc., Park Square Building, Boston 15, Mass.

• 1891 •

We regret to report the death of Charles H. Hanington, in Denver, Colo., on September 10. Frank Howard and his daughter-in-law, Dorothy, had seen Charles in Denver several times during the past few years. Since he attended our 50th reunion, he had become one of our regular correspondents. Living so far away, we had not seen much of him over the years, although he attended our 30th, and perhaps one other, reunion. Because of an automobile accident not long ago, he had to curtail his activities but still was regularly on the job as president of the Denver Museum of Natural History. The following is from a Denver newspaper: "Mr. Hanington had been a member of the board of the museum since 1923, and its president since 1930. In the early 1930's he also was president of the Denver board of education, in addition to his business activities as treasurer of Mountain Motors, Inc. He began mining activities in Colorado in 1891. For six years he was associated with the Boston & Colorado Smelting Company in Argo, Col. He leased and operated mines in Creede, Leadville and Red Cliff. For eight years he was general manager of the Eagle Mining and Milling Company. He was a member of the Cactus Club, Mile High Club and Denver Country Club. At one time he also belonged to the Motor, Colorado Mountain and Grand Lake Yacht Clubs, and to the Loyal Legion. Surviving are his wife and two brothers, Henry and Robert W., of Denver."

A letter from John H. Birks to Harry Young, written in October, from Montreal, reads as follows: "I have had several heart attacks, but the old pump is still working and letting me get down to the office for an hour or two just to break the monotony

and keep me from being too much of a nuisance to my wife at home. I would like to come down to another reunion, but don't think the doctor will let me do much more traveling. However, I am really in pretty good shape and enjoying a quiet time seeing our business develop under younger men. Sorry that our fine President, Harry Bradley, has gone as he was certainly a great fellow. My older brother (two years older than I am, and who will be 80 next Monday) is young enough to start off on a flying trip to England, Greece, Rome, and some of the displaced persons' camps in Germany, Luxembourg, Belgium, Amsterdam, and Oslo, to get a few more honors, as he was president of the relief work for these foreign countries during the War. We were a little anxious about his traveling, but he had a fine trip in the air across the ocean and is very enthusiastic about the whole journey.—Ambrose Walker spent the summer in Salem, and is now back in Winter Park, Fla., his winter home for many years.—HENRY A. FISKE, *Secretary*, Grinnell Company, Inc., 260 West Exchange Street, Providence, R.I.

• 1892 •

The Secretary has the sad duty to report the death of two classmates, H. C. Dresser and E. C. Hall. Henry C. Dresser died in a Boston hospital on October 31. Since his retirement in 1944 as general manager of Martel Mills, Inc., with headquarters in New York, he had made his home in Southbridge, Mass., and was still actively engaged as an expert in the textile industry. In the above mentioned position he was responsible for the management of more than ten southern textile mills. In 1896, soon after graduation, he designed and built the Louise Cotton Mill for the Charlotte Machine Company in North Carolina. This was followed by a long life of active practice in the textile industry. Born in South Deerfield, Mass., he was graduated from Phillips Exeter Academy in 1888 and entered the Institute that year. While here he followed the Course in Mechanical Engineering, specializing in mill engineering and construction and graduated with us in 1892.

Directly after graduation he started in the textile industry with the Central Cotton Mills in Southbridge, operated by his grandfather, Chester A. Dresser, and later by his father, Henry B. Dresser, and some 20 years later became associated with the New York concern with which he remained until his retirement some 30 years later. He is survived by three brothers, Frank G., and Robert B. Dresser of Providence, and Dr. Richard Dresser of Boston, and a sister, Miss Edith A. Dresser of Providence. Looking back over the years, those of us who were with him in the Department of Mechanical Engineering remember the pleasant hours we spent in the drafting room after class assignments were over, making up our work on various drawings and studies. Always pleasing in personality and of an especially happy disposition, Tommy Dresser would regale us with the strain of "My Girl Lives in Baltimore" and other songs.

Just before preparing this article, the Secretary received the notice of the death

of Edward C. Hall on November 20 in Waltham Hospital. Born in Roxbury in 1870, he attended the Watertown public schools and Berkeley School, entering the Institute in 1888. Following the Course in Mechanical Engineering, he graduated with us in 1892. Shortly after graduation he entered business in Watertown and became interested in the real estate business there some 40 years ago. At the time of his death he was chairman of the Watertown Housing Authority. He was a representative for his district in the Massachusetts Legislature for four years, retiring some eight years ago. He served for nine years as water commissioner for Watertown, and was a former chairman for the Republican Town Committee of Watertown. He was treasurer of the Old Ladies' Home of Watertown and of the Watertown Historical Society, a member of the Sons of the American Revolution, and the First Parish Unitarian Church at Watertown. He is survived by his wife, Mrs. Maude W. Hall. He was a life-long resident of Watertown and had a charming summer home at Lanesville, Mass., where Harry Carlson tells me he had the pleasure of visiting him last summer. He has always taken an interest in our various class reunions and was with us at our last on the 55th at Marblehead.

The Secretary is indebted to Harry Carlson for the following regarding Charles H. Chase of Stoneham who graduated with us in Course VI. For 50 years Chase has been trustee of the Stoneham Library and feels that the time has come to relinquish the responsibility and has accordingly resigned. His colleagues are apparently unanimously against his retirement and will be very loth to accept his resignation as they value very highly the advice and guidance through which he has made Stoneham's Library one of the most efficiently managed of any town of its size. All of his classmates know of Chase through his career of 43 years on the teaching staff of the Tufts Engineering School from which he retired as professor emeritus in 1940. Chase reports that he has very nearly recovered from a slight physical upset last summer and is still going strong, walking about the town and driving his own car. We wish him many years of continuation of the useful service which he is rendering in his community. — CHARLES E. FULLER, Secretary, Box 144, Wellesley 81, Mass.

• 1895 •

Time rolls on; our ranks are thinning fast. Charles Foster Tillinghast, 77, retired vice-president and managing director of the Textile-Finishing Machinery Company of Providence, R.I., and former ocean yachtsman, died suddenly on October 2, at his home, 260 Angell Street, Providence, R.I. A direct descendant of Stephen Hopkins, colonial governor of Rhode Island and one of the signers of the Declaration of Independence, he was the son of the late James A. Tillinghast and Sarah Benson Anthony Tillinghast. Another of his ancestors was the Rev. Pardon Tillinghast, 17th century pastor of the First Baptist Church of Providence. He graduated in 1891 from the Mowry and Goff School and received a B.S.

degree at Technology in 1895. He started work with the textile machinery company as a salesman and retired in 1941. A noted yachtsman, he won the first ocean race from Montauk Point to Marblehead in 1904, capturing the Lipton Cup. The winner of dozens of other yachting trophies, he continued to attend regattas even after he gave up active sailing 10 years ago. His son, Charles F. Tillinghast, Jr., gained national prominence in 1935 when he navigated the ketch, *Hamrah*, 900 miles to a Nova Scotian port after the vessel had been raked by a storm on the first leg of a trip from Newport to Bergen, Norway. Three crew members were swept overboard; the 21-year-old Tillinghast and others made port safely.

Charley enlisted in the Rhode Island militia in 1896 and was commissioned a second lieutenant. With the United States Volunteer Service during the Spanish-American War, he was assigned to duty in North Carolina as captain of Company A of the First Rhode Island Volunteer Infantry. He rose to colonel of militia between the wars, and in 1917 retired from the National Guard to accept an Army commission as colonel in the Coast Artillery. Fort Grebel, his wartime command, was an important defense position in Narragansett Bay and was used also as a training camp. After the War he was active in the Army Reserve, serving in both the coast artillery and the field artillery. He was placed on the inactive list with the rank of colonel in December, 1939. Keenly interested in the history of Rhode Island and his own family, he was a member of the Society of Colonial Wars, the Sons of the American Revolution, the Mayflower Society and the Rhode Island Historical Society. He also was a member of the Agawam Hunt, the Hope Club, the Military Order of Foreign Wars, the M.I.T. Club of Rhode Island, Athenaeum, Chamber of Commerce and the Rhode Island Country Club. He was a former commodore of the Bristol Yacht Club and a former member of the Corinthian and Boston Yacht clubs in Marblehead. He is survived by Mrs. Tillinghast, a son, a daughter, and four grandchildren. We who are still living may remember Tilly best as the commanding officer of the '95 M.I.T. Corps of Cadets, alias freshman drill battalion.

We have been advised of the passing of Richard Morey, of 701 West Broadway, Sedalia, Mo. When details are available they will be reported. — Dr. Joe Walworth of Andover, Mass., has sojourned to Lakeside Inn, Mt. Dora, Fla., for the winter. — Your Secretary wrote a letter to himself, admonishing him to be more careful in his physical activities, as these notes are typed while nursing a fractured ankle in a plaster cast. Still going! Best wishes to all for 1949. — LUTHER K. YODER, Secretary, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Notice was given in the December issue of the death of J. Lloyd Wayne, 3d, on October 10. The *Indianapolis News* furnishes us with further information which follows in part: "J. Lloyd Wayne, III, former general toll supervisor for the Indiana Bell Telephone Co., died . . . in

his home, 1834 N. Alabama St. Mr. Wayne had retired from active duty in 1939, after 40 years with the Bell System. Graduated in electrical engineering at . . . Technology . . . he got his first job on the engineering staff of the New York Telephone Co. . . . In 1902, Mr. Wayne began reviewing all new telephone patents each week as they were issued by the United States Patent Office. From that time until 1914, his reviews appeared in electrical journals. In 1903 and 1904 he was on the faculty of . . . Technology as instructor in mechanical engineering and telephone engineering. He was the author of the telephone section of Foster's Electrical Handbook, a standard work at that time. . . . He was a charter member of the Hoosier State Chapter, Telephone Pioneers of America, serving as president in 1924. . . ." — A. LeBaron Russell, retired Boston investment banker, and socially prominent Mayflower descendant, died on October 6 at his home, Old Sudbury Road, Wayland, Mass., after a long illness. He was a descendant of the original settlers of the Massachusetts Bay Colony at Plymouth.

Albert E. Cluett has not been well this past summer. He has had letters from some of the Class and is tremendously appreciative. His one regret is that he hasn't taken time through the years to get better acquainted with the boys. Drop him a line at 59 Second Street, Troy, N.Y., and pass the word on to any of the other boys that you may see. — Mrs. R. N. Brodie (Martha Gage, class baby) is in the Baker Memorial Pavilion, Massachusetts General Hospital, under observation because of continued high blood pressure. When the Secretary called on her recently, he found her very cheerful. She would be glad to hear from any member of the Class.

In appreciation of a copy of the Resolutions which we sent to Charlie Locke's family, we received the following note from Mrs. Burdick: "Thank you very much for sending me the Resolutions which cover Charlie's career so fittingly, and which the family will always cherish." Many letters have been received following the announcement of Charlie's death. Conrad Young, who was always in close touch with Charlie, could not attend the funeral service because of severe illness of his wife. He left on October 14 for Florida. — All will agree with Paul Litchfield, I am sure, that Charlie was the principal instrument in binding the Class together, keeping each of us acquainted with the whereabouts of our classmates. — Louis Freedman sends us a quotation from Tennyson to supplement the Secretary's: "The individual withers and the world is more and more." Louis adds: "The number of '96 men diminishes but M.I.T. is more and more, with responsibilities far greater than any we were called upon to assume. May the present and future classes face them as they should."

From Marshall Leighton: "Charlie's characteristics were such that he remained always on tap in my heart and my mind. I wonder if this is not the supreme test of a man." — Billy Clifford's letter reads in part: "Charlie was a grand fellow, and he certainly was devoted to his Class. My wife and I celebrated our 41st wedding

anniversary here at home some days ago. One of my boys, G. M. Clifford, Commander, U.S.N., is out in the Pacific serving as air officer of the U.S.S. *Tarawa*. Bill, Jr., is in the advertising business in Washington, which is nice for us as he can come down week ends to be with the old folks. Though at 73 I do not fox hunt anymore, I do ride over these eight hundred acres of mine every day, checking my beef cattle and supervising the labor. With some months in Florida, or another warm place, every winter, we vary the routine." — H. H. Tozier writes: "The Class of '96 has been very fortunate in having for so many years one who was so devoted to the interest of the Class as Charlie was. That is also true of Technology. This past summer I looked up Guy Morrill. I had been promising myself to do so for 25 years or more but never got around to making good until then. Guy is supposed to be retired, but for a retired man he keeps on the go a great deal of the time, and I had to make three tries before I caught up with him. He and Mrs. Morrill are both well and I had a very delightful visit with them. They plan to make their home in Canandaigua."

From Dan Bates: "Six weeks ago, after Mrs. Bates and I got back from our extended trip in the northwest, I got a letter from Reub Bakenhus telling about Charlie and of his second operation, and then I wrote to Charlie and also to Reub but there seemed to be nothing that could be done. However, I kept having the matter in mind and was just starting to write you today to see whether there was any comfort or relief I could give our old classmate when this letter of yours reached me." — Helen Dodd sent the following comments: "I like your telling about Rye. I always feel strongly that our New England burying grounds are like Don Byrne's descriptions of those at Destiny Bay, a gathering place for living and dead. I know, because my people have lived in this town since 1762."

— John Eynon states for us all: "Reunions without Charlie will be sadly lacking his cherry presence." — Charles Tucker writes from North Andover: "It does not seem possible that Charlie has gone, and our Class will never be the same again without him. Bertha and I miss him personally because for a number of years he has made a yearly call on us when he came back from Rye, and we always enjoyed it a great deal. We loved Charlie Locke and his passing left a void in our personal friendships and, of course, a correspondingly large void in our class friendships."

Myron Fuller left on November 1 by automobile for Ft. Myers, Fla. He says: "This year I am driving via Pennsylvania, West Virginia, Virginia, North Carolina and western South Carolina and Georgia. It will be about 2,000 miles, mostly in mountains from the Catskills of New York to northern Georgia." — Will Coolidge regretted not having attended Charlie's funeral. He had to be in Milwaukee on that day for the dedication of a laboratory in his name. He writes: "I greatly appreciated the conscientious effort that Charlie gave to us." — Alfred Shaw wrote from California: "It was with great shock and an acute sense of personal loss that I read your notice of the 14th to let me know of the passing of Charlie Locke, our

Class Secretary for so many years. Through those years, Charlie and I had been rather good correspondents, and exchanged many personal favors and help in matters concerning mining especially. So, I can hardly believe the grand guy has gone ahead, as he was about two years younger than I. Last time I saw him was in January, 1923, when I was East on mining business and we had a good talk in his office at the Institute. He certainly did seem hale and hearty then. However, I knew about his cardiac trouble, for he wrote me about it later on. Your mention of this other intestinal matter is a surprise, of which your description is very complete and I'm sure all the rest of us are glad to know the details." — Also from California we heard from Billy Haseltine: "Charlie had always seemed to me more or less indestructible and not like the rest of us other merely mortal folks. Certainly the Alumni Association will miss him, and especially, of course, the men of '96. It has always been a matter of regret to me that I did not live where I could get together with some of my old classmates, and I welcomed the opportunity while I was in Washington during the late War of having eight of them to dinner, but regretted very much that you and Charlie were not able to attend. As you will note, I am at present in California, the refuge of old folks. Just before I left the military service in the fall of 1945, I had to undergo an operation at the Walter Reed Hospital and came out here to recuperate. We liked it so well that we have been here practically ever since and shall probably spend at least our winters out here from now on, although we do not intend to make it our permanent residence."

Concerning his stay at the Institute, James Howe says: "My father was a friend of General Walker's and I was invited by him to 'come and browse' while I was working in the Boston libraries on my first bibliography of the metals of the platinum group. Aside from Lythgoe, I do not remember any of my fellow students. I became acquainted with Locke by correspondence. I shall miss the latter's not infrequent letters." — Amos Robinson of Texas wrote: "The news was a great surprise to me because Charlie's reports in *The Review* were the first things I looked for for several years, and when I saw him ten years ago he seemed so hearty and on top of the world that he has seemed more of a fixture than just another old man. We shall miss his name on the notes in *The Review*. Last June I could no longer walk as a surveyor or construction man must, or see as a designer must, so between rather simple mechanical efforts and some reading, I do a great deal of resting."

John Tilley sent his thanks for the résumé of Charlie's passing and added: "It is a comfort to know he did not suffer greatly." Probably no one in the Class knew Charlie better than John. He refers to the job of secretary and wonders if it will be too great an obligation on my part to continue the work which Charlie so admirably accomplished. The Secretary would like to note at this time that there seems to be no reason why he should not be able to take over the correspondence. He appreciates the suggestion of John's

as well as other similar solicitous inquiries along the same line. The Secretary also trusts that the Class will be indulgent with any short comings until he gets "squared away" in his job. Many thanks for all favors and a very happy new year to you all. — JOHN A. ROCKWELL, Secretary, 24 Garden Street, Cambridge, Mass.

• 1897 •

It is again with deep regret that we must record the passing of one of our classmates. Klaus J. Steiner, III, died on October 4 at his home in Pittsburgh, Pa. He had been seriously ill for several years.

The Secretary received the very interesting letter quoted below from George Wadleigh telling of contacts with several '97 men while on a trip to the western end of New York State: "Edward F. Strong, II, has resided for many years at Buffalo and was connected with the General Electric Company as lamp department manager. At 65 he was interrogated for possible retirement but was in such fine shape and doing such an excellent job that retirement was postponed until the age of 70. Since retirement from General Electric Ed has taken an agency for the American Sterilization Company, handling ultraviolet sterilization equipment. This keeps him busy five days a week and looking like a man of 50. Ed sent his best to all '97 men whom I should encounter and said that he would do better in connection with the reunion in 1952 than he did at the last reunion. At Niagara Falls for a few hours, it was my intention to run over to Youngstown, N.Y., and see Than Howard, but time and transportation did not permit. The best I could do was to telephone him and for this Than was very grateful. Than would like to see more of the Class but he is rather off the beaten track, his farm being some distance from Youngstown. He reported himself in fine shape and sent his best to all '97 men. His son, who, if I remember correctly, was the class baby, lives next door with his wife."

"At Rochester, Mrs. Wadleigh and I spent some grand hours with Ed Hawkins and his wife. It was fine to see Ed completely recovered from the serious eye trouble that kept him from the 1947 reunion. Ed is too valuable to the Kodak Company on development work to let him retire. His job lets him get about a good deal visiting his son in Virginia and another son who is with Yale and Towne. All my contacts wondered why such young things as Henry Worcester, Tom Weymouth and Bill Potter want to retire at their age. There must be something in connection with Western New York which maintains youth for a longer period."

"As for your correspondent's presence in Buffalo; this was for the particular purpose of the Tappi (Technical Association of Pulp and Paper Industry) annual engineering reunion. My job was that of chairman of the materials handling committee for the engineering division. Many of us older engineers are trying to pass along to the younger men coming up some of the results of experience that they have not encountered in active service and which are omitted from the text books and the usual technical curriculum. Education now seems to be so specialized and the

knowledge acquired by a pulp and paper mill engineer needs to be so broad that there is a wide gap that needs filling. Hence, my rather strong interest in Tappi. Besides, it is more or less of a game and keeps the barnacles away." George's address is 500 Fifth Avenue, New York 18, N.Y.

Proctor Dougherty advises that he was present early in November at a tea in Washington, D.C., at which Dr. Karl Compton and his brother, Dr. Wilson Compton, were present. He also advises that Dorothy Moore Leitchman, the younger daughter of our late classmate, Hugh Moore, has recently dedicated a library to the memory of her mother in the new Unitarian Church in Arlington, Va. Many of our classmates will remember Mrs. Moore who was several times hostess to them at the Moore's summer home at York Harbor, Maine. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

• 1899 •

Miles S. Sherrill, V, Professor Emeritus of Physical Chemistry at the Institute, is now teaching this subject at Boston College. He is taking the place of Professor Glasston who is temporarily working with the Atomic Energy Commission. Sherrill's address is 1060 Beacon Street, Brookline, Mass. — In July, Clancey M. Lewis sent a postal card depicting the Lake Washington Floating Bridge at Seattle, Wash., said to be the largest floating bridge in the world. Its length is 656 feet, each floating section of concrete 315 feet long, and weighs 45½ tons. Horace McCurdy²² of the Puget Sound Bridge and Dredging Company built the pontoons. The bridge nets \$100,000 monthly. Clancey retired in 1942.

Percy Witherell's son is a senior at the Institute. — Frederic Stearns is a member of the firm of Shepard and Stearns, architects, on Franklin Street, Boston. — Clifford M. Balkam, VII, of Colorado Springs, Colo., died on May 14 according to a notice from the Alumni Secretary's office. A letter addressed to his former home has, so far, elicited no further information. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

• 1900 •

A change of address notice from the Alumni Office to the effect that the address of Charles E. Paul has been changed from Chicago to St. Petersburg, Fla., seemed to call for an explanation. A letter to Paul elicited the following: "Thanks for the invitation to send an account of my activities since June, 1900, but it is a long story when measured by Old Man Time, and tedious and dull when compared with the opportunities and accomplishments of the fellows who followed us. The leading details relating to my work as mentioned in your letter are given in an abbreviated form in a short sketch in *Who's Who in America*. You can find it in any of the recent volumes if you are looking for items relating to class statistics. I had a letter from Sumner Manley recently. He divides his time between New Hampshire and

Ohio and seems to be well and enjoying life."

This letter meant a trip to the public library for me. There I found the volume referred to. Paul was born in Belfast, Maine, on December 6, 1876, and graduated from Chauncey Hall School before entering Technology with our Class in 1896. He graduated with us from the Mechanical Engineering Course, and began his career as designer and sales engineer with the James W. Tufts Company in Boston. He must have had an urge for teaching, for in 1903 he became assistant professor of mechanical engineering in Kansas State College. There followed frequent changes as Paul went up the ladder. In 1905 he became professor of mechanical engineering in New Mexico College of Agriculture and Mechanic Arts; in 1907 professor of mechanics in Pennsylvania State College; and in 1908 he went to the Armour Institute of Technology (now Illinois Institute of Technology) where he remained until his recent retirement. There he was associate professor of mechanics until 1914, professor of mechanics in charge of the department from 1914 until 1941 when he was retired as professor emeritus of mechanics. In the meantime he had been director of the department of engineering science from 1933 to 1941 and chairman of the department of mathematics from 1934 to 1937. In his consulting practice he has specialized in industrial construction and materials since 1908. He has been associate editor of *American Builder* and of *Cement World*, construction engineer for the National Lumber Manufacturers Association, a member of several engineering societies and clubs and the author of booklets and technical articles relating to building construction, concrete, lumber, estimating and contracting. In 1905 he married Mary E. Yenawine.

This reference to *Who's Who* made me wonder how many of our Class have been similarly honored. Looking through the book I found that there are 17 living members included. At least three others, now deceased have also appeared. The living ones included are: H. B. Bigelow, VII; Charles H. Hughes, II; Sullivan W. Jones, IV; Arthur I. Kendall, VII; Charles T. Leeds, I; Clifford M. Leonard, I; Francis C. Lincoln, III; James L. Little, IV; George H. Mead, X; Charles E. Paul, II; Greenleaf W. Pickard, V; George E. Russell, I; Charles E. Smith, I; Marcy L. Sperry, II; Frank R. Walker, IV; Raymond Willey, X; and Alan H. Woodward, III.

Several of these men have been seldom, if ever, heard from in these notes. Perhaps extracts from their biographies might be interesting from time to time. Take Arthur I. Kendall for example. He was born in Somerville, Mass., on May 7, 1877. After graduating with us from the biology department he got his Ph.D. at the Johns Hopkins University in 1904; Dr. of P.H. at Harvard in 1911; Sc.D. at the University of Southern California in 1932. He was director of the hygienic laboratory, Panama Canal Commission, Ancon, Canal Zone 1904-06; fellow, Rockefeller Institute for Medical Research and bacteriologist, Research Laboratory, New York City Board of Health, 1906-09. There fol-

lowed professorships at Harvard Medical School, Washington University School of Medicine, St. Louis, and at Northwestern University School of Medicine where he has been professor emeritus since 1942. Kendall has been a trustee of the Wesley Memorial Hospital at Northwestern University, Chairman of the Yellow Fever Commission of International Health and was awarded a Service Medal by the Panama Canal Commission. He belongs to medical and biological societies too numerous to mention. He is also author of several books and numerous articles on bacteriology and hygiene. His present address is Oracle, Arizona.

We have notice of a change of address for Harold B. Mayhew, I, from Hyattsville, Md., to West Tisbury, Marthas Vineyard, Mass., and for William H. Hubbard, from Washington, D.C., to Margareta, Canal Zone. We also regretfully record the death of George W. Pigman, VI, on June 30, 1948 (your secretary called on him in New Orleans last February), of Sidney F. Ross, IV, on May 31, 1948, and of Albert P. Stock, VI. — ELBERT C. ALLEN, *Secretary*, 54 Bonad Road, West Newton 65, Mass.

• 1901 •

Charlie Bittinger writes: "As you ask for items of interest the enclosed refers to an unusual combination of a navy captain receiving a medal for high art." — The enclosure is an attractive folder of the Artists Fellowship, Inc., 1868-1948, recording the presentation of the Benjamin West Clinedinst Memorial Medal to Charles Bittinger, Captain, U.S.N.R. It states that the medal was presented on June 6, 1948, in the Jackson Memorial Hall of the Virginia Military Institute, Lexington, Va. ²³Painter — The Artists Fellowship takes pride in presenting the first Benjamin West Clinedinst Memorial Medal to Captain Charles Bittinger USNR for his achievement in the field of Art, for his research into color, and the excellence of his paintings based on the fundamental principles of Art as outlined in the resolution. Captain Bittinger was born in Washington, D.C., June 26, 1879. He was a pupil of the Art Students League of N.Y., after which he journeyed to Paris where he entered the Ecole des Beaux Arts, Delecluse and Colarossi Academies.

"He is a member of the National Academy of Design, Allied Artists of America, Salmagundi Club, Washington Art Club, and the Colorist of which he was President. He was awarded the Bronze Medal, St. Louis Exposition in 1904; Clark Prize in 1912; Silver Medal, P.P. Exhibition, San Francisco; J. Elliot Prize, Newport Art Association, 1938. His works are in Alleghany College, Meadville, Pa.; City Art Museum, St. Louis; Metropolitan Museum of Art, New York; National Academy of Sciences, Washington, D.C.; 'Ranger Purchase Room in Arlington, where Lee married'; Montgomery Museum of Fine Arts, Montgomery, Ala."

Phil Moore sent in the clipping which follows in part and wrote: "This is the son of Paul Hansen'02." "Dr. Paul Scott Hansen, 35, socially prominent Chicagoan, died in Santa Barbara, Calif. of infantile paralysis. Dr. Hansen, a consultant in blood diseases at Santa Barbara Clinic,

was graduated from Northwestern University medical school in 1935, and interned at St. Luke's."

A report that we happened to notice in a New York City paper reads in part: "... Pierre S. du Pont III['33] yesterday was elected a director of E. I. du Pont de Nemours & Co. to fill the vacancy. Mr. du Pont is the son of Lamot du Pont, former chairman of the Board—The new director, now manager of rayon tire yarn sales, joined the company as a chemist, in 1934, a year after being graduated from M.I.T."

P. Freeman Goodwin writes: "In case you want it for purpose of record I attach a synopsis of my professional and business experience. I have never gotten around to attending any of the class reunions; I intended to attend last time but my health would not permit. As you will see by the attached sheet, I was in the Army, World War I; tried to get in for World War II but my physical condition would not permit. From the time I left Technology I was with various contractors 'climbing up the ladder' to superintendent's job, and so on." Here are a few highlights from the synopsis: "General contracting for about seven years; United States Army Captain, later Major, Corps of Engineers (Res) during World War I and for two years after the War; about three years as superintendent, construction, office of supervising architect, Treasury Department, United States Government; from 1923 to 1936 with Jobbing and Wholesale Corporation, ended as vice-president; for two years in business for self and later unemployed because of ill health; about four years assistant superintendent of Construction, United States Veterans' Administration; retired in 1942."

George Shute forwards a clipping which he thinks is applicable to many situations. — "The elegant term 'associated with' frequently means 'temporarily employed at \$25.50 a week.'" — Anthony Peters says: "My doings up to date can best be described as vocation — avocation — vacation. As you know, in 1915, after 14 years of practice at my profession, I gave up my vocation of engineering, and took up my avocation of organic chemistry, having developed an adhesive coating that looked good, and turned out to be very good. In 1943 I sidetracked my avocation, and donated my services to the Army Engineer Corps, and so back to the old vocation. After three years and three E's (forgive me) with the Engineers, I decided to take the *o* out of vocation and replace it with an *a*. I retired from business, and found plenty to do trying to catch up with odd jobs around the house."

"Retiring certainly has its compensations. We spent the summer in Maine on Lake Alamoosook, one of a chain of three lakes starting near Blue Hill and emptying into Penobscot Bay, near the site of our old camp where we had spent many pleasant summers. The fishing was very good for summer fishing; my largest was a four and three-quarter pound small mouth black bass, caught on a four and one-half ounce fly rod, with a new green ghost streamer fly, that I tied the previous winter. We got back to Boston after Labor Day, and spent the rest of Septem-

ber pulling weeds out of the garden. The snow has kept me busy this winter and in trim for paddling next summer. We are now looking forward to the middle of June, when we hope to start down Maine again, if the ice is out of the lake by that time."

Russell Putnam writes: "I had occasion to visit Boston on September 10 and in reading the Boston *Herald* I ran across this death notice: 'Whittemore — In Newton Lower Falls, Sept. 4, Charles A., husband of Marie Small Whittemore of 66 St. Mary's Street.' Charley Whittemore was an '01 man in Course IV. We are getting fewer and fewer!'"

Anna Gallup reports: "I am living in an apartment at 47 High Street, Mystic, Conn. There is activity here for a new children's museum in New London and I work at some of the meetings. Children's museums are multiplying and I have much correspondence with persons founding them. An International Council of Museums has been formed, and one meeting was held last November in Mexico City. There will be a meeting in Paris next June with instructions to the children's museums committee to make the world organization permanent. I have been invited to attend but shall not make the trip."

Carl Johnson writes: "I am owner and operator of the Instrument Flight Institute, teaching airplane flight by instruments, radio air navigation and celestial navigation. Our graduates are flying for the airlines, and during the War, across the Atlantic and Pacific. One has been killed in flight, Ed Holt, a navigator in a crash at Guadalcanal. I am still connected with the Johnson Service Company manufacturers of air conditioning control devices, and so forth, with 47 offices throughout the United States. I am a 32-degree Mason as well as a Knight Templar and Shriner. I have a summer home at Lake Tahoe and now winter near Pasadena, Calif. I dabble in architecture, musical composition, landscaping, publishing and yachting, and probably look like most of my classmates; snow-white hair, and am doing the things I always wanted to do at this time of life. I still enjoy flying and belong to the Washoe County Aero Squadron at Reno and the Southern California Aviation Country Club of Los Angeles. I am a member of the Sons of the Revolution and am working on the genealogy of the Johnson family descending from Captain John Johnson of Roxbury, Mass., first American officer killed in the fight with the Indians at Narragansett Swamp."

"I think all the boys are interested in the job which the Secretary is doing for the Class and offer my personal thanks. In going over the class records, I am deeply impressed by the high positions which my classmates have attained in the scientific and business world. During progressing years since graduation we have all had to completely alter, and many times reverse, our scientific thinking since the day we were taught that the atom was the smallest indivisible particle of matter, à la Professor Cross. The paramount subject in Course II, steam engineering, has all but fallen by the wayside. Modern science has given the lie to much we learned but good old mathematics is still with us,

undiluted." — GUY C. PETERSON, *Secretary*, 788 Riverside Drive, New York 32, N.Y. THEODORE H. TAFT, *Assistant Secretary*, Room 3-282, M.I.T., Cambridge 39, Mass.

• 1902 •

Your Secretary has to report the death of two of our Classmates. Ralph E. Kimball died on February 12 in Tiffin, Ohio, where he had resided for many years. No other information is available. — E. LeRoy Brainerd passed away on October 10 at Middletown, Conn. He had been in poor health for some time and had been unable to attend our last reunion. For a short time in the early part of his career, Brainerd was engaged in railroad work, first in the Pacific Northwest and later in the East with the Delaware, Lackawanna and Western Railroad Company. In 1918 he joined the Russell Manufacturing Company in Middletown, with whom he remained for about ten years. At the time of his death he was manager of the local Connecticut State Employment Service. He was a member of the Warren Lodge, Ancient Free and Accepted Masons of Portland, Conn., and of the Washington Chapter, Royal Arch Masons of Middletown, and the M.I.T. Club of Hartford. His wife, Mildred Lighthipe Brainerd, survives him. — BURTON G. PHILBRICK, *Secretary*, 246 Stuart Street, Boston 16, Mass.

• 1903 •

In reply to our notice of the 45th anniversary, we received a number of letters of regret in which changes of address, positions or conditions, and little items of interest to others in the Class were indicated. Among these we note that W. H. Adams, II, now holds the rank of colonel in the Ordnance Reserve, U.S.A., after eight years in the Army; four in World War I, 1918-1922, and four in World War II, 1940-1944. F. B. Jewett, VI, attended the official opening of Mount Palomar Observatory, and the University of California commencement. H. C. Merrill, X, is conducting a chemical laboratory in Ayer, Mass., for the control of the tanning process at Hartnett Tanning Company. E. H. Millard, II, is still hard at it developing a new method of forming pipe for the oil industry. J. J. Murray, II, is water commissioner for the city of Newton, Mass. The following men have retired from active work in their professions: C. L. Bates, I, now living at Savary Island, British Columbia; W. P. Cross, XIII, partially retired, "gets some nice winter vacations" in Havana, Guatemala and Mexico, has three children and eight grandchildren; G. H. Garcelon, VI, has moved back to Longmeadow, Mass.; W. M. Gilker, VI, is living in Dallas, Texas; and C. A. Schmidt, III, who hopes to attend our 50th reunion, has moved to Seattle, Wash.

These reunions also bring to light deaths that had previously escaped us. G. W. Bateman, II, died on April 13; R. A. Burr, IX, on July 19, 1945; L. F. Myers, I, on October 22, 1947; Lucile E. Sargent, VII, in January, 1948; A. J. Scholtes, IV, on July 22; and L. H. Underwood, III, on June 26. Bateman had been with Sullivan

Machine Company in Claremont, N.H., for many years, mostly as purchasing agent. Some years ago we saw him but he was too busy too come to a reunion. Scholtes' death we recorded in the November issue of *The Review*. Underwood, one of the better-known men of the Class, was a member of the Class Day and Institute committees, class representative to the Association of Graduate Class Secretaries, and a member of various societies. For many years after graduation, he was with the Youngstown Sheet and Tube Company and other steel companies in the vicinity of East Chicago.

One of the most prominent and widely-known members of the Class in educational and scientific circles, Richard C. Tolman, X, died on September 5, in a hospital in Los Angeles, Calif. He was dean of the California Institute of Technology Graduate School and one of the creators of the atomic bomb. The *Los Angeles Times* has this to say of him: "He had been a patient at the hospital since Aug. 14, when he suffered a stroke at his home, 345 S. Michigan Ave., Pasadena. Dr. Tolman joined the Caltech faculty in 1921 as professor of mathematical physics and physical chemistry. Previously he had served as chief of the dispersoid section of the chemical warfare service in World War I with the rank of major and had taught at the University of Illinois. He left the Pasadena institution in 1940 to accept a Presidential appointment as vice-chairman of the National Defense Research Committee. During World War II he worked under Maj. Gen. L. R. Groves at the Manhattan Project where the atomic bomb was developed. At the war's end he was decorated with the Medal of Merit and made an honorary officer of the Order of the British Empire for his work in atomic research. In 1946, Gen. Groves appointed him head of a committee of scientists to disseminate the technical discoveries made during the bomb's development and to recommend peacetime uses for atomic energy. Dr. Tolman predicted great advantages to industry and medicine, particularly in the field of cancer research, when all of the secrets of the Manhattan Project could be safely revealed. Dr. Tolman later served as an advisor to Bernard Baruch on the commission for world control of atomic energy and was scientific advisor to the U.S. delegation to the United Nations. He returned to Caltech late in 1946. On the campus he was known both as a scientist and a philosopher. He believed that scientists must recognize that the work of artists, ministers and poets dedicated to searching for the beautiful and good is just as important and difficult as the discovery of a new atomic particle. However, he said, scientists must dedicate themselves to the search for truth, whether it be beautiful or ugly, good or evil." Tolman leaves a widow, a brother and a sister. He was one whom your secretaries had hoped to get to a class reunion. — **FREDERIC A. EUSTIS**, Secretary, 131 State Street, Boston 9, Mass. **JAMES A. CUSHMAN**, Assistant Secretary, Box 103, South Wellfleet, Mass.

• 1905 •

There have been a few requests for copies of the four-page mimeographed

class notes for November, which missed *The Review* on account of tardiness of copy. There are a few more available for anyone wishing one.

Ralph Hadley made a social call on the Secretary, regretting that the 1948 tennis season had closed and hoping that Kenway, Bridges, or someone would visit the Fountain of Youth this coming winter so as to do battle with him at the reunion next June. Ralph has a new grandson, and now four grandchildren, the father being G. Edwin Hadley '38. Ralph and Grace had been recently to Iowa, visiting a daughter engaged in religious education work at the University. — Carl and Betty Graesser report vacationing recently in Maine, New Hampshire, Vermont and Canada. Carl must be quite a fisherman as Betty suggests it would be cheaper in some of the pools around home. — Clark Warren, II, reports that his oldest son, Clark E., Jr., has established a New England agency, representing Alden Products Company and Pierce Roberts Company, and is living in Newtonville. Clark suggests our co-operation but we do not know yet whether Junior is handling rubber boots or erasers. Just a bit of a reunion with Sam Shapira and his son, Norman '41, who has just returned from a long stay in Italy, first with the United States Army, then with the United States Embassy at Rome, then in an export-import business.

Hans F. Schaefer, III, died at his home, 2145 Luray Avenue, Cincinnati, Ohio, on September 19. He was vice-president and a director of the Lunkenheimer Company, from 1908 to 1922, retiring then and spending much of his time at his summer home at Biddeford Pool, Maine. Besides his wife he is survived by two daughters and two sons, one of whom, H. Frederick, Jr., '39 lives at Marblehead, Mass. Roberts S. Foulds, IV, passed away in the Pennsylvania Hospital, Philadelphia, on June 20, where he had been a patient several days. For our Ten-Year Book Bob wrote: "Since graduation I have stuck to one company," apparently to the bitter end, for at his death he was contracting engineer for the Phoenix Bridge Company, Phoenixville, Pa., where he started June 9, 1905. Among the many projects erected under his direction were the Pulaski Skyway, High Level Viaduct, the Buzzards Bay, Mass., Vertical Lift, St. George's Arch, St. Georges, Md., and the St. Johns River Bridge at Jacksonville, Fla. He left a married daughter, with whom he lived in recent years, also two sons and eight grandchildren.

We have some sad and belated news in the death of Forest O. Sprague, V, at the General Hospital, Martinsville, Va., on January 20, 1948. Mr. and Mrs. Sprague had just been hospitalized on account of injuries sustained the week before, but Forest developed pneumonia from which he failed to rally. Death was due to embolism. He was a native of Haverhill, Mass. His first job after graduation was with the Boston Consolidated Gas Company, where Bob Folsom, Bob Lord and G. M. Bartlett also started. For several years prior to his death he was sales engineer for the Borne, Scrymer Company, Elizabeth, N.J., where he had made his home for some time. Besides his wife, he left a married

daughter and a son. — **FRED W. GOLDTHWAIT**, Secretary, 274 Franklin Street, Boston 10, Mass. **SIDNEY T. STRICKLAND**, Assistant Secretary, 69 Newbury Street, Boston 16, Mass.

• 1907 •

Under date of November 3, as the result of a letter that I had written to him, I received a fine letter from Byron P. Luce, and he gave his address as in care of Cia. Azucarera del Rio Guayalejo S.A., Xicotencalt, Tamps., Mexico. I quote in part from his letter: "Seven years ago I landed in Colombia, South America, having flown to Bogotá. This city can be delightful during certain seasons of the year, and again it can hand out the worst climate possible. No wonder everyone goes around with a sour face with never a smile or a glint in the eye. Everyone is wrapped in ruanas or overcoats, all in somber colors. One never sees a dash of color in the ladies' attire, and their chief occupation is going to and from the innumerable churches that stand on nearly every street corner. I was in Bogotá for only a few days and then went to a place called Ambalema, a very old and primitive town on the Magdalena River, to supervise the erection of a sugar factory supplied by the Honolulu Iron Works Company and was there for a year. This place is also off my calling list, for between the heat, the insufferable swarms of gnats, the world's worst food, and having to sleep on a bed consisting of an inch thick mattress laid directly on boards, the conditions do not attract one for a return engagement. . . . Following this I became manager of a sugar property in the Valley of the Cauca River, or Valle del Cauca, which I believe to be one of the most favored spots in the world. It is a gorgeous valley between the two cordilleras of the Andes. Rainfall is about 31 inches per year; part in the spring and the balance in the fall. The temperature every day has a maximum range of 65 degrees to 85, and the elevation is about 3,500 feet. The vegetation is lush, the rich alluvial soil being in some cases a meter deep. The developed plantations are all irrigated from streams higher in the hills, and the Cauca River flows through the entire valley in a winding course. Upon completing a three-year contract as manager of the Valle sugar producer, I was all set to return to the United States when a cable came from the Honolulu Iron Works Company asking if I would stay on in Colombia for a short period to take care of some business inquiries. As a result, I remained in Colombia with headquarters in the delightful small city of Cali. Thus for the last three years I was in engineering sales work in Colombia, with the main account that of the Honolulu Iron Works Company, for whom I was able to close contracts for two new complete sugar factories. On the 15th of last May, Mrs. Luce and I left for the states and went to Martha's Vineyard, Mass., where our daughter and her youngest son joined us and spent the summer with us. . . . Out of a clear sky while I was at the Vineyard, the Fulton Iron Works Company wired me asking if I was available to relieve their superintendent of construction on a

new factory in Mexico, so I came here in the latter part of last August and expect to be here for at least six months or until the factory is completed and operating satisfactorily. This factory is just about the last word in sugar factory construction with about 6,000 boiler horsepower, and three 2,500 kilovolt-amperes power units. All of the equipment is of the best that money can buy, and, altogether, about nine million United States dollars will be tied up here when the boilers are first fired. I had two delightful experiences during this last summer. First of all, Otis Fales dropped in at Oak Bluffs Harbor, Martha's Vineyard, while on a cruise in his power boat. He and his party had dinner with us. I also saw Becky Sharp and had about an hour with him. He also was with a party on a schooner making a cruise, but was unable to take the time to come to our house for lunch."

Early in last November I received from Jim Barker a photostat of a clipping from the New York Times of October 20 entitled, "U.S. Engineers Get Iranian Contract." I quote in part from this article: "Signing of a contract between Iran and Overseas Consultants, Inc., under which this foreign-advisory group of eleven engineering companies will undertake a study of economic and social conditions in Iran and make recommendations for planning of that country's projected \$650,000,000 development program, was announced here yesterday and in Washington. Iran, now rich in oil resources, is anxious to develop as well its mineral, agricultural and industrial potentials. . . . Overseas Consultants, Inc., was originally formed in June, 1947, at the request of the United States Government to make a comprehensive survey of Japanese industries, and it has been reincorporated. . . . The purpose of the agreement is to obtain outstanding engineering and industrial management consultants to help Iran plan and execute its recovery program. . . . The first group of Overseas engineers will leave for Iran November 15. Their preliminary survey will constitute an exploratory but realistic diagnosis of Iran's capacity to support the proposed development program." The article states that one of the four men who constituted the group to make this preliminary survey was Jim Barker of our Class. In a letter received from Jim on November 7, he said that they expected to be in Teheran, Iran, for only a fortnight and that they expected to return to the United States by the middle of December. Jim said that his part in this work is that of a business man with experience in both national and international finance and practical economics, and not primarily as an engineer, as his associates were all engineers of the highest standing. This consultant work will in no way change his present responsibilities in this country, where he is a member of many boards of directors in both fields of business and education, as anyone may see by looking under his name in *Who's Who in America*. Jim's address is James M. Barker, 1430 North Lake Shore Drive, Chicago 10, Illinois. Incidentally, one of the firms in Overseas Consultants, Inc., is Jackson and Moreland, of which Ed Moreland is senior partner.

Through the kindness of Henry Martin of Washington, D.C., I have a clipping from the Washington *Evening Star* of October 22, which tells of the presentation of the George Warren Fuller award on October 22 at Philadelphia at a meeting of American Water Works Association to Harry R. Hall of our Class, who is chief engineer for the Montgomery and Prince Georges County utility agency of the Washington Suburban Sanitary Commission. This award is made annually for outstanding and untiring efforts in the furtherance of the water works profession. In the case of Harry, he was cited for his "effective service in the sanitary engineering field." He has been associated with this commission since it was founded in 1918. In a personal letter to Henry Martin written by Harry under date of October 28, he states that he was then at home recovering from a heart attack that he suffered last summer, but that he was coming along gradually and hoped to be back on his job before long. Harry's home address is 5600 42d Avenue, Hyattsville, Md., and his business address is 4017 Hamilton Street in that same city.

Last October Howard Marvin, who is a partner with Stevenson, Jordan and Harrison, management engineers, at 19 West 44th Street, New York City, changed his home address to Pepper Crossing, Stepney, Conn. — I have word from the Alumni Office of the death of two men who were associated with our Class in the Course in Mining Engineering, neither of whom has ever been at all active in our class affairs. Howard Morton whose last known address was in care of Brown and Brown, Inc., 613 Lewis Building, Portland, Oregon, died on April 30. Frank S. Hamilton, whose latest known address was Bluehill Falls, Maine, has also passed away on July 6, 1947. — Word has been received of the death of William E. Kershaw, V, on October 29. Mr. Kershaw was retired from the Electric Storage Battery Company of Philadelphia and his home address was Gwynedd Valley, Pa. He is survived by his wife, Margaret, and two children.

On November 17, Governor Bradford of Massachusetts appointed Alexander Macomber, our Class President, as an unpaid member of the Boston Port Authority for a five-year term. Probably you all know that Mac is a partner in the State Street, Boston, engineering firm of Macomber and West. During the last War he was director of the gas division of the War Production Board, and at present is consultant to the National Security Resources Board in Washington. — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. HAROLD S. WONSON, Assistant Secretary, Commonwealth Shoe and Leather Company, Whitman, Mass.

• 1908 •

The first bi-monthly dinner and meeting of the Class for the 1948-1949 season was held on November 16 at the Silver Room, Walker Memorial, M.I.T., at 6:00 P.M. The following were present: Henry Sewell, George Belcher, Winch Heath, Bill Booth, Bill McAuliffe'09, Myron Davis, Leslie Ellis, Sam Hatch, Karl Kennison, Linc Mayo, Nick Carter, Harold Gurney

and Joe Wattles. We should have had several more of our regulars at the dinner but, unfortunately, the date of our dinner was the same as the fall Shrine meeting which probably accounted for the absence of Jeffs Beede, George Freethy, and Frank Towle. After a very excellent dinner, provided by Brother Bridges, a general "talk fest" followed and then Joe Wattles showed the Kodachromes taken by Doc Leslie at our 40th reunion last June at the Oyster Harbors Club. As reported in earlier issues of *The Review*, Joe Wattles attended the International Rotary meeting at Buenos Aires last fall. He showed us some very beautiful and interesting Kodachromes he took on the way down on the S.S. *Uruguay*; many pictures taken in places visited in Argentina and Uruguay as well as at Trinidad on the return trip via the S.S. *Uruguay* to New York. Joe's comments as the pictures were shown gave us new ideas about South America. Joe also showed us some very striking Kodachromes of autumn foliage taken last October in the White Mountain area.

The Boston *Post* of October 1 reported: "Engineers and other employees of the State Department of Public Works yesterday held a farewell party at the Manger Hotel for Arthur B. Appleton of 11 Sherman St., Beverly, who retired yesterday from his post of office engineer of the department, in which he had served for 36 years." Best wishes, Art, for the future, and hope to still see you at some of our dinners. — We are sorry to report the death of Eddie Allen on May 11. Eddie had been with Surpass Leather Company, St. Louis, Mo., for many years. — We have also learned of the death of George Dalrymple at Haverhill, Mass., on October 9. George, after leaving Technology, was employed for a while by the United Shoe Machinery Corporation at Beverly, Mass., and later became associated with his father in the manufacture of shoe bows. For more than 20 years he was assistant treasurer of Dalrymple-Dudley Company, manufacturers of shoe ornaments and supplies, and then became associated with the Equitable Life Assurance Society of New York. He was park commissioner of Haverhill, Mass., for five years, mayor of Haverhill for five years, had been a member of the governor's committee for the Preservation of New England Industries, treasurer of the Merrimack Valley Regional Association, chairman of the State Finance Board, director of Civilian Defense in Haverhill, head of a Public Safety Committee in Haverhill, adviser to the Small War Plants Corporation with headquarters in Lowell, Mass., and a member of various other civic organizations and fraternal groups.

Have you made your subscription to the Alumni Fund? If not why not do it now? — We report the following changes in addresses: Benjamin H. Arnold, 330 East Madison Avenue, Wheaton, Ill.; Monroe Ames, 253 Forest Street, Medford 55, Mass.; John W. Bicknell, 45 Gramercy Park, New York 10, N.Y.; Frederick S. Cram, 220 East Magnolia Street, Independence, Kansas; Allen E. Hazard, 29 Riverview Street, Brockton 26, Mass.; Pryns Hopkins, 1900 Garden Street, Santa

Barbara, Calif.; Richard Y. Kennard Room 1111, 189 West Madison Street, Chicago, Ill.; Emerson F. Lyford, Tistaquin Street, Middleboro, Mass.; Arthur F. Mohan, Southeastern Plate Glass Company, Post Office Box 786, Montgomery 2, Ala.; Charles W. Morrison, 540 Mountain View Terrace, Dunellen, N.J.; Joseph B. Sando, 1633 East Genesee Street, Syracuse 10, N.Y.

The second bi-monthly dinner and meeting will be held on Tuesday, January 11, 1949, probably at Thompson's Spa, Washington Street, Boston. Hope to have George Freethy show the movies he took at our 40th reunion last June at Oyster Harbors. Usual reply post cards will be mailed in due course. — H. LESTON CARTER, *Secretary*, 60 Batterymarch Street, Boston 10, Mass.

• 1909 •

As we go to press for the January Review we want to assure you that the plans for the 40th reunion are proceeding smoothly and we hope to tell you of the final plans in the next issue. The plan now is to go to the Cape where our happiest reunions have been held. So begin making preparations for that pleasant journey in early June to southern Massachusetts!

You undoubtedly have received the messages which our class fund committee has sent out, giving and asking information concerning the manner in which we can best pay back some of the debt which we owe to the Institute for sending us on our way. The committee, Molly, XI, Paul, V, and Reg Jones, VI, have not only put in a great deal of time during the past two years in developing plans but they have enlisted the best advice obtainable from some of our most successful classmates such as Tom Desmond, I, and B. Edwin Hutchinson, III. The plans which they envision fit nicely into the general plans for Institute financing described by Paul in the notes below. Strange to say, both plans were conceived altogether separately, the originators of one knowing nothing of the plans of the other. We hope that the response to all these efforts will be generous. — We realize that requests for financial assistance are coming thick and fast, but our own class treasury now needs replenishing if we are to carry out the several plans under way for the coming year. We have always depended on voluntary subscriptions and none has been made or asked for several years. The amount needed is modest and will scarcely be felt if enough of us become volunteers. When Charlie Main's accounts were turned over there was something over \$100 and the only amounts which have been expended have gone for floral tributes for a few of our most loyal members who have passed on. All other expenses incurred during the past six years for mailing, stationery, postage, incidentals, and even for floral tributes, have been contributed by one or two individuals so that we have scarcely touched our original nest egg. However, this is not enough to pay for the notices and mailing which the 40th reunion necessitates, together with other incidentals, and besides, we cannot let the balance approach zero as

a limit. Individual contributions of \$5.00, or even less, will help a great deal. Make checks out to Paul M. Wiswall and send to his address given at the end of these notes.

Paul now tells us something of the Institute's plans for meeting its present financial needs: "I have already told in these notes about my call on the Critchetts at their beautiful place at Orleans where Jim and Ruth now live since his retirement. From the Cape I went to Boston and spent a delightful day right there at the Institute on the banks of the Charles. As I have told you, I saw Dr. Compton and Jimmy Killian as well as scores of my old buddies. Maybe that is the reason why I had a letter from Dr. Compton asking me to serve on a large committee of over 500 to work on a project amounting to some \$20,000,000. On the committee are our old friends and classmates, Jim Critchett, XIV, Tom Desmond, I, Bradley Dewey, X, Delos Haynes, VI, B. Edwin Hutchinson, III, Reg Jones, VI, Ramon Munoz, III, Molly Scharff, XI, Heinie Spencer, II, Harry Webb, III, Mex Weill, II, Harry Whitaker, VI, and the Class Secretary, V. The funds are to be used for improvements of the Institute, of course. You will hear more from a class representative who is on the committee. As I gather the copy for this number of *The Review* I am at Chet Dawes' fine home and just back from a meeting of the committee in Cambridge where I and most of the men I have mentioned have been in session day and evening for two good days. I have been thinking how lucky I have been to see the Institute again and so many of my friends. It is a very rich experience as many of you can agree. I know, as usual, that the Class will give a good account of itself as it always does, for we have a good Class! I often think how at large alumni dinners we find a fine turnout of our classmates and we often have to ask our neighboring classes to adopt us since at our table every seat is taken. In these past few weeks I have been recalling how at an occasional class luncheon in New York we have had Jimmy Killian as our guest and heard him tell us about the state of things in Cambridge. Now I'll admit that my pet name for Jim has always been just 'Jimmy Boy.' But now I wonder if he'll recognize me as he has these many years. That is a pretty informal moniker for the President of the Institute! Jimmy has been so closely associated with Dr. Compton all through the war years that it seems natural for him to take over as Dr. Compton goes to other duties, mostly in Washington. I am proud to tell you that Jimmy is still the same good old Jim Killian we have known all these years. I saw him this very day as he took charge of things at Cambridge and I can assure you that he will do the needful with skill and with comfort to all of us. More power to him! I wish all of you might have heard what was said in the discussion of 'The Overall Plans for Raising \$20,000,000 for the Institute.' It would have warmed your hearts. Rarely have I ever heard so splendid a presentation as we heard from George B. Harrison, Dean of Science, who amused and edified us as he told us so skillfully of

his own experiences at the Institute. His subject was most appropriately, 'How M.I.T. Looks to an Outsider on the Inside,' which appears on page 165 of this issue."

Molly, in the midst of working on the class fund, was again called to Pittsburgh to act as one of the arbitrators in a labor-management dispute. All that he could tell us is the following: "I can report nothing except that I am presently serving as the industry member of a Board of Arbitration charged with deciding 26 issues in a labor dispute between the Duquesne Light Company of Pittsburgh and certain associated companies and the local unions of the International Brotherhood of Electrical Workers, who represent most of the employees of the company. The other members of the Board are: A representative of the International Brotherhood of Electrical Workers who is acting as union member of the Board; and a lawyer from Detroit, agreed upon by the parties as their selection from a list submitted by the mediation service of the United States Department of Labor, who is acting as chairman. I am finding it an interesting experience."

We were surprised to receive a letter from our President, Carl Gram, X, under the letterhead of the Foster Wheeler Corporation of New York stating that he was hurriedly sailing for Europe to be gone two or three years and that he would be unable to attend the 40th reunion. He says that more details will be coming later. The Foster Wheeler Corporation is an engineering firm which installs large oil refining machinery. We are awaiting with interest to learn more of Carl's program and are wondering what is to happen to the sheep and lamb farm down in Lancaster County, Pa.

For some time we have been attempting to obtain some note from Carleton Hubbard, II, who had settled down in Greenwich, Conn. However, recently he paid a visit to Johnny Davis, II, and let Johnny tell the story: "It was a pleasant surprise when I picked up the phone recently to hear the voice of Carleton Waterbury Hubbard, II, say that he was in Providence on his way to Boston and that while his family did a little visiting he was going to drop in for a chat. Pop, as he was affectionately called in the long-ago days, appeared not to have changed appreciably with the years. He had the same cheerful manner, the broad smile, the enthusiasm, and could have gotten into his old tux without bursting the buttons off. Life appeared to have treated Pop very well, indeed. He said that he no doubt had missed a great deal by not being more social and attending class reunions and so forth, but raising a family of four children and sending them to college took all his time and money. Since then, things have gone unusually well for him financially, his two sons are in partnership with him and his two daughters married. In 1935 the Republicans elected Pop to the Board of Education of Greenwich, Conn., and he became its secretary in 1939. Despite Democratic landslides, he is still secretary and bids fair to hold the job until the retiring age of 72. He has been very active in the Boy Scouts

and various welfare activities in Greenwich.

"Pop runs an architectural and engineering office. In the thirties when no one wanted real estate and the banks handed their foreclosed property over for the mortgage and sometimes even paid the back taxes, Pop being agreeable, acquired many properties. Now he is one of the bloated landlords. I believe he lives in the same house in Greenwich that Phil Young, II, Howard Fisher, II, and I visited while we were working on our thesis tests of the Harvard, Yale boats that used to run between Boston and New York. His only complaint was that too many airplanes fly over Greenwich. During our reminiscences Pop's better 15/16, as he called his charming wife, with her sister and sister's husband arrived. It was a most enjoyable call." Johnny is still studying art and painting pictures. These latter are attracting much attention and several are now decorating the walls of his friends' houses. He is also a member and treasurer of the Cambridge Art Association.

On Wednesday, December 15, Johnny Willard, II, was the speaker at the meeting in Boston of the American Society for Quality Control, his subject being, "How to Sell Ideas like Quality Control." Johnny, as you know, is a member of the firm of industrial consultants, Bigelow, Kent, Willard and Company of Boston. — PAUL M. WISWALL, *Secretary*, 90 Hillside Avenue, Glen Ridge, N.J. CHESTER L. DAWES, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 285 Madison Avenue, New York 17, N.Y.; GEORGE E. WALLIS, 1606 Hinman Avenue, Evanston, Ill.

• 1911 •

A score of classmates gathered at Walker Memorial on the evening of Monday, November 8, for the annual "Seven Come Eleven" class dinner, put forward one day as the 7th fell on Sunday. We would have had our traditional two elevens present, but two Charlies, McManus and Maguire, at the last moment were unable to attend, the former on account of a sudden grippie attack, the latter called out of town on business. A feature of the evening was the following resolution, unanimously passed: "Resolved: that we of M.I.T. 1911 are proud of and thankful for the distinguished services our classmate, General George C. Kenney, has rendered our country and we know those deeds will live forever and further that he will so direct the students at the Air University he now heads that many of them will also be inspired, as well as informed, for valiant efforts."

We were particularly pleased to be able to greet Harold Hallett, VI, who humbly apologized for not having attended a class affair since 1917. Hal is now connected with the Port of Boston Authority as assistant to the chief engineer, with his office at Commonwealth Pier. He told how this authority is more and more controlling all of Boston's harbor facilities. His older boy, a Dartmouth graduate, was, unfortunately, killed in action in World War II, while his other boy, who boasts 58 missions over Germany, came through

the War with but a cheek scratch and is now married, has one son, and is with the Devco Paint Company in Waltham. The Halletts' daughter is a graduate of the Boston University Nursery School and is teaching in Concord. Hal and Elsie live at 7 Concolor Avenue, Newton 58. — Walter Allen, XIII, is still with A. C. Lawrence Leather Company, Peabody, but has occasion to use airplane travel a great deal in visiting the company's other plants; three in the south and one in New Hampshire. He reported the addition of a grandson to three granddaughters in the Allen family. — Ober Clark, II, said that his Nelson Cement Stone Company has had its best year, yet one with maximum worries. Most of the business has been in curbstones the past twelve months, he added.

Marshall Comstock, VI, Boston branch manager of Wagner Electric Company, said there are now two grandsons and three granddaughters in his family; the latest grandson being a year old. — George Cumings, VI, active in television development work in his New England Telephone and Telegraph job, said he had the pleasure of seeing the three Boston games of the World's Series from the roof of Braves Field. — Dennie, VI, secretary-manager of the Gardner Chamber of Commerce, said his count still stood at a pair of grandsons and a pair of granddaughters. He also announced that Orville, Jr. has changed the name of his printing shop in Cornish, Maine, from The Webb-Smith Publishing Company to The Denison Press, his younger brother, George, being with him. — Henry Dolliver, I, is now in his 22d year with Jackson and Moreland, prominent Boston consulting engineers, with most of his work on valuation of public utilities. He has three grandchildren, all girls, with one expected. — Fred Harrington, I, says he is now on a tapering-off job with Whitman and Howard, engineers, 89 Broad Street, Boston. — Stan Hartshorn, IX-B, down from Gardner with Dennie, said he was still busy manufacturing furniture and baby carriages. His daughter, Barbara, following a postgraduate course at Radcliffe, is now registrar at the Garland School in Cambridge, while his son, Stan, Jr., is a student at the University of Michigan in the furniture technology course. He said he and Julia, thanks to Emmons Whitcomb's skillful planning, had had a most enjoyable South American cruise this spring.

Boston Edison's quartet of 1911 men were all present. Tom Haines, II, now in his 36th year with the company, is assistant vice-president in charge of operations and has a hand also in industrial relations. Jack Herlihy, II, is just completing his 35th year and is vice-president in charge of procurement and also has a hand in labor negotiations. Roger Loud, VI, has completed 33 years with Edison and is handling electric and steam sales. His older boy, married last December, is professor of mathematics at the University of Minnesota, while his younger son, Alden, following war service completed three years at Technology in just over two years and was winner of the Sedgwick Biological Prize, a scholarship at Woods Hole Marine Biological Laboratory. Nor-

man Wade, II, who heads the steam engineering division, has two married daughters; one living in Merchantville, N.J., with her husband and one son, the other in San Francisco, mother of four youngsters. — Hal Jenks, VI, with New England Gas and Electric Company, has been busy recently on the plans for a 110,000 volt transmission line on the Cape. Recently at New Bedford he has been busy laying a nitrogen gas-pressure line across to Acushnet. — Morris Omansky, V, consulting chemist, said he had just completed an interesting court case as expert witness, with eight women and four men on the jury, with no opportunity to "come back" at any of his testimony. His daughter, Frieda (Mrs. Felix Cohen), who graduated from the Institute in 1945 in architecture, now has a two-months-old son.

Carl Richmond, I, said business was still very active with Boston Manufacturers Mutual Fire Insurance Company. He and his wife have two boys in Winchester High School and a third son, five years old. Their 14-year-old boy recently had the highest score for boys under 15 in a National Rifle Association tournament. Carl said he had seen Harold Lord, II, who is with Hollingsworth and Whitney in Boston, and Bill Goodhue, V, with the Metropolitan District Commission, Parks Division, Boston, but could persuade neither to come to the class dinner. — O. W. Stewart, I, head of the inspection department of Associated Factory Mutuals in Boston, also reported unusual business activity. His department has grown from 600 to 750 in the past year. — Ted Van Tassel, X, who now lives at 15 Ives Street, Beverly, continues in consulting work and has been doing quite a bit for Paul Kellogg's firm in Montreal. Ted has five grandchildren.

Emmons Whitcomb, X, says he is very happy back in the travel game and recently called on Paul Kellogg, IX, and told of the fine new home the Kelloggs now have, designed by Paul. Emmons told of the great amount of student travel to Europe this summer, considering this a very healthy sign. He also continues to do advisory work for the government of Puerto Rico. — Aleck Yereance, I, still on investment work for Prudential here in Boston, reported a 1948 granddaughter. He also read a clipping from the Melbourne, Australia, *Herald* which said: "There's a warm spot in Australian hearts for a short, wiry American whom Aussies remember as a brilliant wartime commander. That's why they are sorry to hear that Gen. George C. Kenney has been relieved as chief of the U.S. Air Force Strategic Air Command. Gen. Kenney has won a place in Australia's history."

John Alter, IV, of Pearson, Alter and James, architects, 351 Essex Street, Lawrence, regretted that town duties prevented his attendance. "We are very busy at the office," he wrote, with housing, schools and an auto sales and service building, also residences. — Carl Ell, XI, wrote: "Sorry, but just fresh out of hospital for appendicitis operation." — Ned Hall, II, regretted that he had to be in New York that day. He said he had just finished a 90-day tour of duty with the

Office of the Chief of Engineers in Washington and is rushed with trying to again get back into his business; export, import, same as for the last 2½ years. — Beardsley Lawrence, I, wrote that he had just had another session in the hospital; 2½ weeks this time. Instead of at his Lincoln address, he plans to be at 9 Willow Street, Waltham, Mass., for the winter. — Bog Stevens, IV, wrote: "Not a thing new — not even the President. Sorry, cannot attend. Best regards to all."

Don Stevens, II, sent regrets for his inability to get over to Boston for the dinner, adding that he had met General Eichelberger in late October and that he spoke very highly of George. Later it was interesting to learn that Don has been honored with a continuing directorate in Paterson, N.J.'s, largest bank. He was originally elected a director of the Paterson National Bank in 1934. In 1946 this bank consolidated with the First National Bank and became the First Paterson National Bank and Trust Company. On November 1, 1948, they consolidated with the Second National Bank and now are the First National Bank and Trust Company of Paterson, the largest national bank in New Jersey with assets of \$130,000,000.

We now have complete information concerning the fund at the Institute which honors the late Ted Parker, I, prime favorite of all classmates. The fund was established by a group of men who incorporated under a charter from the State of Tennessee under the name of Theodore B. Parker Memorial Fund, Inc. The group is made up of the Chief Engineer, Tennessee Valley Authority; the Director of Personnel, Tennessee Valley Authority; and a representative from each of the Tennessee Valley chapters of The American Society of Civil Engineers, The American Society of Mechanical Engineers, The American Institute of Electrical Engineers, The American Chemical Society and the Technical Society of Knoxville. The group raised a fund and on April 5, 1946, Mr. Charles W. Okey, President of the fund, forwarded a check of \$3,000 to establish the fund on the books of M.I.T. The principal and the income are to be used to support a scholarship or scholarships for such student or students as are recommended by the memorial fund group, with the understanding that all awards, both graduate and undergraduate, shall generally conform to the policies of the Institute's Scholarship Committee. On November 1 the fund showed a balance of \$2,950, as a result of \$250 earned income and \$500 awards to date. In a letter of August 25, 1945, to Edward L. Moreland, '07, Executive Vice-president of M.I.T., Fund President Okey wrote: "The plan contemplates that the memorial scholarship will operate for a limited term and that the money now available will be used, principal and interest, until it is exhausted, which will require about five or six years. We are hopeful that additional contributions will be made from time to time so that the scholarship will be active over a longer period."

Jim Duffy, VI, business consultant, 38 South Dearborn Street, Chicago, Ill., in a fine letter in mid-November writes:

"When one of our classmates is the occasion of a speech in the United Nations Assembly, that is the height of something or other." He referred, of course, to Vishinsky's bold charge that the United States is preparing a Pearl Harbor sneak attack against Moscow and of making concrete plans to wage war on Soviet soil. He referred to an article in *Newsweek* of May 17 by our own General George C. Kenney. We reported that article for you this spring; George having said that the answer to the question: "When will the Communist crowd start 'Operation America'?" is "As soon as they feel they can win." Mr. Vishinsky told the United Nations audience that the economic heart of his country is being aimed at by General Kenney and, in a direct reference to include the United States delegation, "with your connivance and tolerance." He added that the Soviet Government would put a man like General Kenney in an insane asylum. Ho, hum.

Brother Duffy continues that he is "still eating at today's prices under the guise of business consultant. The Great Books Foundation is going great guns out here, with more than 55 members this fall. The plan is for adult groups to meet fortnightly and read good books in small groups and discuss the major ideas expounded. I joined a group at the Union League Club last year and it was a great deal of fun. I was invited to appear on an American Broadcasting Company television network, given Sunday nights by the Foundation, about two months ago and, like the man who came to dinner, have been on ever since. Jack Benny and Fred Allen need feel no alarm as the reward is purely emotional and necessitated no change in my income tax estimate." Good old Jim! — Fred Daniels, VI, President of Riley Stoker Company in Worcester, has been named to an advisory committee to obtain co-operation and advice from community business and industrial leaders in a program of business administration by Clark University. — Norman Nelson, VI, formerly at Westfield, N.J., is now at 221 Hyers Street, Toms River, N.J.

We continue to roll in great shape in the Ninth Alumni Fund and at this November 20 writing we have reached our \$2,800 quota and have passed our 100 per cent contributors' quota of 121. Keep it coming, mates! — ORVILLE B. DENISON, Secretary, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

In the November issue of *The Review*, the proposal of the 1912 group present at the Alumni Day activities to hold an interim reunion in June, 1949, was reported. The 1947 event was enjoyed so much by those attending that the group thought it would be too long to wait until 1952 for the next affair. This idea has brought forth mixed comment, the adverse views coming mostly from men living at considerable distances from Boston. Therefore, in order to ascertain the sentiment of the Class as a whole and to get an indication of the probable attendance, a canvass is being made by post card. If you

have not already done so, please return your card at once, whatever your views may be, and include some personal news that will be of interest to your classmates.

Albion R. Davis, Class Agent, is actively on the job of boosting the Alumni Fund. Help the Fund and help him in his work by making your contribution promptly. — Fred R. Miller, V, a graduate of Boston University who took a special course in Chemistry with the Class, writes that he taught methods of teaching physics at the Institute summer school in 1925-1931. He was head of the Science Department at the English High School in Boston until he retired in 1942. He is married and his three married children have homes of their own. He is the author of *Progressive Problems in Physics* and *Essentials of Electricity*, published by D. C. Heath and Company.

C. Bolmer Vaughan, II, our New York correspondent, reports recent visits with David Dasso, II, of Lima, Peru; Edwin C. Holbrook, I; and Edward H. Mangan, II. The Whites had a most pleasant dinner with the Vaughans in New York recently. Bolmer always picks a fine place to eat. — FREDERICK J. SHEPARD, JR., Secretary, 31 Chestnut Street, Boston, Mass. LESTER M. WHITE, Assistant Secretary, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1913 •

Ed Pratt, I, of Detroit, missed the reunion because of conflict with the date of his daughter's wedding at Montreal. She and her husband, Conrad Schuerch '40, Ph.D. 1947, are doing advanced research at McGill University. His work is in organic chemistry and hers in new anesthesia techniques. Back in school days Ed showed definite earmarks of a crusading spirit, and that perhaps explains his present occupation. Ed thinks that Detroit's major metropolitan problem is that of rapid transit, and he is at work on it, with great fervor. The problem involves engineering, and financial promotion, both on a large scale, and of the two it seems that promotion is the hardest nut to crack. Ed plans a modern metro-utility which involves a fast central underground artery with main trunks, using the family car as a regular daily adjunct and supplying auto parking as an integral part of the system. He estimates that, in connection with a ten cent fare, parking could be furnished for about six cents per hour. To engineer such a project and, further, to sell it to private investors looks like a tremendous undertaking but Ed has the courage which it takes.

In the General Foods' recently published *Family Album* is the following story on Joe Cohen's, X, creation, Atlantic Gelatin: "Gelatin has many uses. Its greatest use is in the food industries. More than 18 million pounds of gelatin are used annually in the production of gelatin desserts. The ice cream industry uses gelatin to improve consistency, flavor and palatability. It is employed extensively in the meat, confectionery and baking industries. The photographic industry uses gelatin to bind silver salts to photographic plates, films and paper. The pharmaceutical industry uses gelatin to make capsules for medicines and vitamins and as binders

for pills. The world's leading producer of gelatin is Atlantic Gelatin, located at Woburn, Massachusetts. The history of this GF unit starts just after the first World War. It was organized in October, 1919 by Joseph H. Cohen, a chemical engineer from M.I.T. Work on a large modern plant started immediately. By fall of the following year, the plant had been completed and was producing gelatin at the rate of a million pounds a year. Today it produces more gelatin than any other plant in the world. Atlantic Gelatin joined General Foods in 1930. Jell-O is Atlantic's biggest customer." Joe is active in public and private causes, and his latest was reported in the Boston *Herald* of November 10 as follows: "Friends of Rabbi Joshua Loth Liebman yesterday launched a campaign to collect \$1,000,000 as a starter for establishment of a trust fund in his memory to endow the Joshua Loth Liebman Department of Human Relations at Hebrew Union College, Cincinnati, his alma mater. Joseph H. Cohen, who was instrumental in bringing Rabbi Liebman to Temple Israel in Boston, is chairman of the Boston division of the campaign, which has set up offices at 10 High street. 'This fund,' said Cohen, 'will be more than a means of expressing tribute to a rare and fine man; it will serve also to keep alive and to extend his work. Human relations as practiced by him combined ancient traditions and advanced trail-blazing. He taught the faith and ethics of old, made specific by his knowledge of modern psychiatry, the social sciences, and great learning. The basic goal of \$1,000,000 is the quota for New England,' Mr. Cohen explained."

Fred Morse, I, of Los Angeles, is more occupied with the broader aspect of economics than most engineers, and he is thoughtfully concerned about the theories of Mr. Keynes which are getting into elementary text books, such as assumptions that "private virtues are social vices." An example: Individual savings are apt to reduce social well being and to cause recessions and unemployment. "Government is assumed to do better than the individuals whom it is supposed to represent." The idea involved here is that when an individual turns politician and goes to Washington he shows more wisdom and virtue than he exercised as a private business man. Fred deplors the trend away from the economics of thrift, which is understandable to most of us who were raised in the days when thrift was gospel.

Ken Reed, II, was recently elected president of the general alumni association of Washington and Jefferson College for 1948-1949. — Laurence A. Bevan, II, was appointed last April to the new position of director of extension work in agriculture and home economics at the University of New Hampshire in Durham. — Larry Hart, XI, suffered a great loss when his wife, Bernice, died in September. They had been engaged before Larry entered Technology, and their married life had been most congenial. I had known Bunny, as Larry called her, for many years and had liked and admired her, so I can appreciate what a blow it is to Larry. He wrote a very appreciative thank-you note

for the red roses which were sent by our Class. — John Blatchford, III, died on March 11, and Raymond E. Palmer, II, died on August 26 in Mexico City. Ray was 57 years old and was engineer and general manager of the United States Rubber Company's Mexico City project. He joined our Class in 1911 after graduating from Dartmouth. He left his wife and two daughters. — We have notices of the following address changes: Don Van Deusen, II, from Washington, D.C. to Boston; Sherman R. Ramsdell, V, from Milton, Mass., to Lubec, Maine; and George A. Taylor, II, from Kearny, N.J., to Burlington, N.C. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 788, Pawtucket, R.I.

• 1914 •

Walter Eberhard, who is assistant professor of Graphics at the Institute, spent a good portion of this summer driving across the country visiting a considerable number of the national parks. He found his trip very pleasant and interesting. Unquestionably, the safety of his stays at some of the national park service hotels was increased by the automatic sprinkler installations that Frank Ahern reports he has had put in them. — Ed Bowler reports that he has returned to his position as head of the department of Civil Engineering at the University of New Hampshire. Ed, unfortunately, had to give up teaching for over a year because of illness. — The Hyde Park, Mass., *Tribune* published a recent article about Gardner Derry. It has been noted in these columns before that Derry is now the manager of the B. F. Sturtevant Division of Westinghouse. In spite of a very active business position, Derry has found time to engage in a very considerable number of community affairs such as being a member of the Sharon finance committee, the school committee of that town, service on the selective service board, trustee of the Civic Foundation, director of Sharon Coöperative Bank, and corporator of Elliot Savings Bank.

As your Secretary looks through the data that comes to his attention regarding the Class, he is always impressed by the very large number of civic activities in which classmates are engaged. It certainly refutes the statement often made that engineer-trained personnel take no interest in local affairs.

Again it becomes necessary to record the death of a classmate. Earl Stanley Parker, who in recent years had made his home at Martinez, Ga., died of a heart attack on March 5. He is survived by a wife and a son. Parker did not complete his full training at the Institute but had been engaged in the textile mill business practically all of the time since he left Technology.

Charlie Fiske has arranged for a 1914 dinner to be held in New York on November 30, at which time matters pertaining to the coming 35-year reunion will be discussed. A report of this dinner will appear in the next issue of *The Review*. — If you have not sent in your class dues, it would be appreciated if this could be done promptly so that funds will be available to meet the expenses of the directory now being prepared and of the various litera-

ture that will be sent during the next few months. — H. B. RICHMOND, *Secretary*, General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York 19, N.Y.

• 1915 •

On November 1 we were \$552 and 31 contributors behind last year's totals on that date in the Alumni Fund. 1915 never gives up; there are only a few of you left to send in your check. Let's go over the top again this year and soon!

1915 is a wonderful Class and the 35 classmates and guests who gathered at the Boston Yacht Club, Rowes Wharf, Boston, on November 12 for a class party are a shining example of the splendid spirit and friendliness of our gang. Our yacht-owning classmate Bill Brackett arranged this party through his membership and it was voted the best and biggest Boston party we have ever had. Bill Campbell, our own Professor, told us about radiant cooking and the sterilization of foods by the use of high-voltage electric currents. Bill gave an interesting and illuminating talk describing revolutionary processes that these developments may produce. He high lighted it with his inimitable humor and the discussion period following led by Weare Howlett and Johnnie O'Brien brought out some roaringly funny questions and answers, particularly in regard to new and odd uses for these processes. Bill then exhausted us with selections from his famous repertoire of stories.

Present as guests were: James W. Tonra, Chief of Police, Brookline, Mass.; Earl Jertson; J. Warren Evans '39; Bob Scully (Frank's son); Eddie Maher (Henry Sheils' son-in-law) and Jack Mohr '50. We wanted Jack Mohr to see how a group our age could keep young at a class party. Classmates attending were: Gene Place, Marshall Dalton, Henry Sheils, Wally Pike, Ernest Loveland, Whit Brown, Harold Colby, Johnnie O'Brien, Bill Brackett, Archie Morrison, Weare Howlett, Ed Sullivan, Ricker Freeman, F. E. Murphy, Bill Campbell, Frank Scully, Herb Swift, Sam Eisenberg, George Rooney, Clive Lacy, Jac Sindler '17, F. E. Waters, John Homan, Max Woythaler, Larry Landers, Abe Hamburg, Loring Hayward, Pete Munn and Azel Mack. Thirty-five in all. — Long time no see and glad to see again: Ernie Loveland, Harold Colby and Jack Dalton. Long distance prizes to: Speed Swift, New London, N.H.; Loring Hayward, Taunton, Mass.; Max Woythaler, Framingham; Ernie Loveland, New Bedford; John Homan, Beverly; and Whit Brown, Concord. Wayne Bradley, who signed up from Bridgeport, Conn., and would have won this spirited contest but was unable to attend, thoughtfully sent us an amusing wire. The tremendous success of this party spurs us on to arrange a New York party soon.

It is the satisfaction of pleased customers like Herb Anderson that gives me my reward in the labor of love for 1915. Thank you, Herb, for "them kind words." "Congratulations on the splendid 1915 notes which appeared in the November issue of *The Review*. The ability which you

have demonstrated in maintaining quality and quantity together over so many years is just outstanding." — Fanny Freeman continues to receive justly deserved credit for his splendid work. The Boston *Record* of September 13, with an excellent picture of Fan, said: "O. Ricker Freeman, nationally-known architect and M.I.T. graduate, for nearly 40 years a dominant factor in providing recreational and educational facilities for Hub children, will be feted by a group in the Mission Hill Housing Project hall in Roxbury on Thursday, September 23."

More fine letters came with class dues. From Ray B. Stringfield, 229 South Normandie Avenue, Los Angeles 4, Calif.: "The '15 Fellows in these parts still seem to show up whenever there is nourishment in sight. At the dinner meeting of the M.I.T. Club of Southern California on January 16 when Lobdell '17 was out from Cambridge there were six classmates, which was more than any other class. Dave Hughes looks grayer and more dignified than ever; Ken Kahn tells us about all the screwy things they put in airplanes these days; Bill Mellema is still building schools to try and keep up with the growth of population in these parts; Walt Rivers got together with Irv McDaniel '17, who has finally retired from the Navy, and rehearsed the '15 Tech Show; Bob Welles, the retired capitalist and Ray Stringfield, the worn out chemical engineer, sat back and enjoyed their steaks. Trust the enclosed piece of paper will be sufficient aid to the treasury as my darling but expensive daughter seems to need endless amounts of clothes."

Congratulations to Alan Dana on his engineering award: "You cannot imagine how astonished I was to learn that you had seen a clipping from the Ansonia, Conn., newspaper in reference to the trip I was about to make. How in the world news in our little newspaper reaches Boston is still a mystery to me. You may be interested to know that my wife is an inveterate reader of your column and it was she who informed me of this news. It is true that I started out on this trip but it is also true that I returned which may seem like a foregone conclusion, but I was not so sure with 16,000 miles of flying over deserts, desert mountains, the Andes and the Amazon jungles. It was a wonderful postgraduate course in history, geography and human relations. In the vicinity of Cuzco, Peru, we were at elevations of around 14,000 feet and some of us found it most difficult to do any climbing or much walking under those conditions but the Inca ruins there were worth the effort. I note the statement made by Lloyd Chellman in a recent copy of *The Review* and I would like to say the same thing, namely, 'I still like my wife.' We have one boy graduating from junior high school and another just about to enter. The latter holds out prospects of being a mechanical or electrical inventive engineer but the older boy, who is a whiz in school work, is no more of an engineer than a violin virtuoso would be. That reminds me of an item which may appear in the local paper and I might save you the trouble of getting the clipping. I have an engraved notice from the American Institute of

Electrical Engineers that at the meeting of the Board of Directors held on May 1, I was transferred to the grade of Fellow. This, naturally, pleases me." Alan's address is 49 Day Street, Seymour, Conn.

So, Classmates, ends all the available material I have for notes. This is not the cry of "wolf, wolf," but "help, help!" — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

As this is being written we are all basking in a wonderful New England autumn, sunny and warm enough to make an office seem the drabest spot on earth, and brisk enough to give the air a wonderful tang. Let's hope by the time you read this column that we are not in the midst of waist-high snowdrifts and endless blizzards as we were last year. The favorable weather has apparently brought good results as far as getting news from classmates is concerned. This month we doff our hats to Harold Dodge, our Assistant Secretary, for his highly successful efforts in rounding up the greater part of the following. First, we learn from the Boston *Herald* of October 13 that Gordon Fair has become the Master of Dunster House at Harvard, one of the seven undergraduate residential centers of that neighbor of ours. Gordon has been at Harvard for about 30 years now, having taught and engaged in research in the graduate school of engineering and school of public health. Congratulations are in order, and we know this new position is a well-deserved honor. — Francis H. Dillon writes a brief word or two about his life. He is with the Registry of Motor Vehicles office in Lowell, and has been with them since the office was organized in 1919. He devoted a portion of his time prior to that date in the armed forces, and he tells us his son, who has just completed his master's degree at Yale, gave four years to the service in the recent conflict. His invitation to drop in for a visit is passed on to the rest of the Class.

On the letterhead of the Erie Ceramic Arts Company, Erie, Pa., we have welcome words from Eric Schabacker: "I certainly enjoy reading about my classmates in *The Review* and ought to be appreciative enough of your efforts to have responded more promptly to your recent requests. At the end of the War, I sold my half interest in The Erie Enameling Company which I organized in 1922 with one partner. Last year I organized the Erie Ceramic Arts Company to make small vitreous enameled parts, especially dials for gas and water meters. In 1919 I was married to Maud Bailey, a high school classmate, and we have brought up four daughters and one son. My oldest daughter is married, has three sons and lives at State College, Pa., where her husband is engaged in fuel research. My son graduated from the Naval Academy in 1945 and is undergoing his flight training at Corpus Christi. One daughter finished Wilson College last year, one is a senior at Wheaton and the last is in high school here at home. Thus endeth the vital statistics. I have been somewhat insulated from my Technology friends, having attended only the 25th reunion; I do see Ray Brown and Harold Gray occasionally. It would be a very pleasant

surprise to hear from any of my old friends who might happen into Erie. Many thanks for the fine job you are doing for us 'stick-in-the-muds.'"

And we are glad to report that Joe Meigs has come across with the following message in reply to a follow-up of a follow-up of a follow-up. [As secretaries we are sometimes known to send follow-ups to an even higher order expressed as (follow-up)⁴ and (follow-up)⁵]. Joe says: "I am terribly sorry for not sooner answering your letters. The only extenuating circumstances that I can offer are that shortly after receiving your note of May 15 I was afflicted with an illness which took me out of the picture during the summer, and when I got back I was snowed under with work, and still am. Last May I appeared before a subcommittee of the committee on the Judiciary of the House of Representatives to argue in favor of a bill to establish a legislative criterion of invention, H.R. 4061, the purpose of which is to establish a yardstick for measuring invention. I want to thank you for your letters. You deserve the co-operation of every class member. I hope to do better in the future."

Steve Brophy is always news. He writes: "Perhaps the most newsworthy activity I have been engaged in for the past year and a half has been the American Heritage Foundation, sponsors of the Freedom Train." Steve is the 1947-1948 president of the Foundation. Its objectives are to develop a greater awareness of the advantages we enjoy as Americans and to persuade all Americans that only by active personal participation in the affairs of the nation can we safeguard and preserve our liberties. The plan includes the Freedom Train, the Week of Rededication immediately preceding the arrival of the train in each city, and a year-long campaign of public education to persuade the people that "Freedom is everybody's job!" Besides all this, in 1948 Steve became a member of the Institute's Corporation and following a year as vice-chairman was made chairman of the American Association of Advertising Agencies. How in the world he ever does all these things is beyond us. We don't believe we have mentioned before that in 1947 he was appointed honorary commander of the Order of the British Empire and received the 1947 Gold Americanism Award of Wall Street Post, American Legion. Steve continues as president of Kenyon and Eckhardt, Inc.

Harold Burkhardt, terming himself world's champion poor correspondent, belies his own terminology by sending a wonderful letter giving a complete account of himself. He says: "I am back again with my old love, the Millers Falls Company, manufacturers of tools from way back. I was with them until 1932. The next 16 years I spent in Worcester, Mass., first with the American Steel and Wire Company and then with the Leon J. Barrett Company, manufacturers of centrifugals, where I worked with W. A. Hyde '04 in the laboratory in research and development work. I was married in 1920, and we have two children. My weaknesses are Irish Setters, hunting and fishing. My dog is my constant companion, even goes

with me when fishing. You can depend on it; whenever I spot a nice trout rising in some pool and just when I get ready to cast to him, that dog comes dashing out of the woods to leap into that very pool! If you are ever up this way, drop in. My latch string is always out to any classmate."

Today many freshmen have babies, but do you remember how phenomenal it was back in 1912 to actually know a freshman, Emory Kemp, who really had a baby? Well, Grandpop (we presume) Emory sends us his good story from Cape Cod, together with some sample post cards of the homestead: "As you possibly may recall, at our last reunion I was still with the great Atlantic and Pacific Tea Company. In August, 1946, the opportunity came to purchase our family home in Wellfleet, Cape Cod, which was built by my great-grandfather and went out of the family in 1908. I am enclosing a card showing you the main house. Besides this building which contains nine large rooms and three baths, we have in the rear a guest cottage with two bedrooms and a bath, also a little house with fireplace, kitchen and bath; a three-car garage, and finally a two-alley bowling alley, which I operated last summer and did a nice business during the summer season. We operate as a guest house and are open for guests the year round but do not serve any meals. Believe me, there is plenty of work of all kinds to keep this place up to par, so much so it was necessary for me to resign from the Atlantic and Pacific in May, 1947. However, during last winter, it being our slack season, I went back with the Tea Company in January and stayed until May and plan on doing the same this winter. My son, Malcolm D. (the '16 class baby), resides in Braintree, Mass., and is an accountant with Bethlehem Steel Plant at Quincy, Mass. Any time any of the Class meander down this far on the Cape they might make this their stopover. Just as a suggestion, would it not be very nice to arrange a designated hotel or café in Boston for once a month for all classmates who are in and around Boston? This could be arranged for the same day each month so that class members from out of town visiting here would know that on a certain day each month some members of his Class would be together and they could join in with them. Nat Warshaw, Harold Russell and I discussed this idea and thought it would be a good idea to organize this get-together."

In re the above suggestion, it is your Class Secretary's opinion that it is a most excellent one! So, how about it, classmates? Would you be amenable to setting a day each month (we would prefer the second Tuesday of each month) for this get-together? Please drop either of the Class Secretaries a note if you approve. If the plan meets with success we might start another one in New York.

We had a nephew molded in the Institute's aeronautical atmosphere by Professor Shatswell Ober a few years ago, and were glad to receive the following bit from Shatswell just the other day: "My story is very prosaic: I have been on the teaching and research staffs at the Institute since 1922 working in the field of aerody-

namics as applied to airplane design. My only daughter, Marjorie, is hard at work in the office of dean of freshmen at Harvard."

We greatly regret to learn that our good old Charlie Lawrence is laid somewhat low with a heart ailment, but knowing Charlie we'll bet it will be only temporary. His following contribution is especially appreciated: "A welcome breeze you send me (from the other side) of grand old pals, other times and the joyful vision of youthful manhood for a better future in this grand old world. I have completed a quarter century of school service in Massachusetts in which I have aided many to see visions of what they could become — and start them on useful careers, ranging from two professors at Technology, doctors, ministers, one priest, engineers, teachers and others. During the last days of December the 'Ole Dibble' heart gave me much trouble — but I am very lucky for I lived while recently five others of my fellow superintendents died of the same trouble. Talk about occupational diseases and hazards from the 'quiet occupation' of school superintendent! I am lucky and happy although retired for repairs and recharging of my batteries. But the family are all fine, including the good wife. My oldest boy, Richard B., is married and a research associate in the physics department at the Institute. My second son, Charles H., is married and with the Connecticut Department of Public Health as sanitarian. His work brings him into frequent contact with Duke Wellington in the New Haven Water Department. He is living not too far from 1916's famous Jack Burbank in Hartford. (Jack take notice.) The third son, Dr. William I., is a practicing dentist in Indianapolis, Ind. Two daughters are keeping us interested in youth. Leonia Nancy is a senior in high school and Mary Katharine is the youngest and just as peppy as they come."

Paul Thomas believes he can "think of nothing particularly romantic to write about," to quote his first paragraph. He tells us that he was with Alex Brown and Sons in Baltimore as head of their statistical department until 1935, when he organized an investment advisory department for the firm. "In 1942 when they decided to divorce the investment advisory work, I took it over and became the Baltimore partner of Naess and Cummings, investment counselors. Ragnar Naess '23, one of my partners, came from Norway to attend the Institute. I was married in 1922 and have two children. My vacations have not been especially glamorous and have not taken me into foreign lands as in the case of many in the Class. As to my avocations, I might mention that music, swimming and mountain climbing are my favorites."

We ran across Dick Hunneman in Boston the other day at the Harvard Club where he was administering a meeting of the Harvard class of 1914. He looked fine, was full of pep, and should write us some more details on his own. Come on Dick, let's have them. — And that's that for this time. See how easy it is? All you do is drop us a line, and we write it up and publish it. It's quite painless, really. So all the rest of you reluctant ones get on the band-

wagon and send us all the news. — RALPH A. FLETCHER, Secretary, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, Assistant Secretary, Bell Telephone Laboratories, 463 West Street, New York 14, N.Y.

• 1917 •

We were shocked to learn of the sudden death of Monty Lovejoy. Several of us had met him on the street recently and he appeared to be in his usual good health. As a matter of fact, he went to business on Wednesday, November 17, as usual and died of a heart attack that evening. His many friends, especially among the Boston and New York crowds, will miss Monty at future parties and reunions, but will cherish many memories of his genial presence which contributed so much to these events. Condolences from the Class have been sent to Mrs. Lovejoy.

Kid Cochrane was recently elected vice-president of the Massachusetts State Golf Association in which he has been active for a number of years. — The Class Treasurer, John Littlefield, announces that receipts for the class history are coming in very slowly and all members of the Class who intend to contribute to the cost of printing are urged to do so at once in order that the printing bill may be paid.

Every member of the Class in New York appears to be extremely busy and there has been a minimum of contacts. At the annual steak dinner at Ruppert's Brewery five members of the Class were present, including, besides Lobby, who came down from Cambridge, Dix Proctor, Dad Wenzell, Hubert Wellcome and Joe Littlefield.

Major General Albert F. Hegeberger, who is now with the Department of the Air Force in Washington, D.C., wrote Lobby this fall that he had spent the years from 1939 on in the Pacific, China and Okinawa. Hege spent a few months in the Walter Reed Hospital this past year, and announces his intention of visiting Cambridge soon. — Paul Gardner writes from Kansas City, Mo., that like all the rest of us he is up to his neck in work and wishes he could get East once in a while. — Allen Kingman is still in the Army with the rank of colonel and stationed in Washington. His oldest son was recently commissioned in the Army Medical Corps as a captain. His younger son has just entered Northwestern University. Allen recently celebrated his grandson's first birthday.

Walter Beadle writes that while he was in Houston in September he phoned Bob Gay, whom he had not seen since leaving the Institute. Unfortunately, Bob was flat on his back in bed and unable to see visitors, but chatted for two or three minutes on the telephone, and told him he was going to the Naval Hospital for a complete checkup. — We are always glad to put in a plug for one of our deserving classmates. It was mentioned in previous notes that Ed Doherty was with the Warren Soap Manufacturing Company. This company has in the past specialized in industrial soaps but has now, under Ed's guidance, entered the retail market with a super duper — or should we say super sadder — liquid soap under the name of Willow Wash. We have it from Ed that no woman can do a real job on those dainty

unmentionables unless she uses this soap. Incidentally, Mrs. Doherty concurs in this opinion.

By the time these notes appear, you will all have received a report of progress on the class gift. If you have not already sent in your reply post card your committee would greatly appreciate it if you would do so, and promptly. There is an erroneous idea among some that this class gift is in conflict with the special fund campaign which is being carried on by the Institute at this time. We are assured by Jack Dalton '15, general chairman of the fund committee, and by H. B. Richmond '14, chairman of the alumni division of the same committee, that there is no conflict and that both give their hearty endorsement to our plan. — **RAYMOND STEVENS, Secretary**, 30 Memorial Drive, Cambridge 42, Mass. **FREDERICK BERNARD, Assistant Secretary**, 24 Federal Street, Boston, Mass.

• 1918 •

The technique of current magazine articles in trying to pry open the enormous oyster of America seems to be a city by city sort of reporting. This has led us in a nonchalant sort of way, to say nothing of the happenstance of where the news comes from, to concentrate our January efforts on the streak of so-called civilization which is bounded on the north by Lake St. Clair, on the east by Canada, on the south by Lake Erie, and on the west by Henry Ford. The oldest city of any size in the United States west of the original seaboard settlements, like Boston for instance, Detroit now has a population of 1,623,452, concerning three of whom this scribe is about to report while you huddle beside your radiator. Albert Saunders might have been named Grover Cleveland Saunders, had his parents been in sufficiently genial communion with the president when Albert opened his lungs to announce his arrival way back when. But they did not name him Grover so Al it must be. He came to us from Malden and got a degree in Mechanical Engineering, along the way having distinguished himself by giving musical promise with the Banjo Club, and political or professional promise as president of the M.I.T. student branch of the American Society of Mechanical Engineers. You may conclude for yourself what promise his chairmanship of the bulletin board committee foreboded. If there had only been a radio station at the Institute in those days, Al's chairmanship might have provided us with just the right nifty. Anyway, the years went by, and the roots of the jaunty moustache matured, and Al became a manufacturer's agent selling air filters in Detroit.

Next to Malden lies Melrose, and since cities form the skeleton on which this reportorial flesh is hung, that brings us, again by way of mechanical engineering and something to do with air, to Harry Levine. Al is just twelve days older than Harry, remembering, of course, that 1896 was a leap year. The name Harry might have had political implications half a century later, but Harry wasn't Grover either. But he was headed for Detroit, where he went into business for himself as an air-conditioning and refrigeration expert. He

got the contract for all nine stories of the Industrial National Bank in Detroit, and for all the air conditioning in the Briggs Stadium, including the refrigeration for the food concessionaires. How many miles of pipe this necessitated we do not know, but enough to go places we are sure. Right now, while you are reflecting, while huddled beside that radiator, on the superior qualities of nature as a refrigerating agent, Harry is in Florida, as has been his custom for years. But his boy is up in the Institute struggling with the fact that force equals mass times velocity and with something vaguely called valance in the chemical laboratory. Meanwhile, back in Detroit is the house Harry bought and furnished for his young hopeful before the lad decided to put in a hitch at Cambridge before going back to work for the old man. Anybody want to rent a nice place?

Final item on our trilogy of Detroiters concerns Sam Heyman '19, whom we do not remember at all, but who has been certified to us as a genuine mechanical engineer having received his degree in 1918. Sam is now industrial property manager in charge of plants and equipment for the Fisher Body division of General Motors. Sounds to us like an exalted plant manager who has to hoard his strength because of a multiplicity of responsibilities. Be that as it may, Sam does have to hoard his strength as the result of an attack of rheumatic fever some five or six years ago. But he is so well thought of by General Motors that they are glad to have him, even on a part time basis in a full time job. Perhaps it's time for you to stoke the furnace a little if you want to keep the radiator warm. — **GRETCHEN PALMER, Secretary**, The Thomas School, The Wilson Road, Rowayton, Conn.

• 1919 •

The Class has been writing in to your Secretary in most cases stating that they will be on hand at our 30-year reunion, plans for which will be announced shortly. Charley Farist writes: "You can count on me for the reunion next year." — Jack Fleckenstein says: "Yes, will try and attend the 30th reunion next summer. My oldest daughter, Miss Joan, is one of the six freshman girls at Technology this fall. She will take geology and says she hopes to find some crude oil for me if I can hold out until she graduates. Joan is living at the girls dormitory at 120 Bay State Road, Boston, and in her last letter reports that she likes the Institute better than she ever dreamed she would. On your next trip West, be sure and stop off for a few days. Perhaps I will see you at the API in Chicago in November." Your Secretary did visit with Jack in Chicago.

Dan Hall writes: "I plan to attend the 30th reunion unless it happens to come between May 27 and June 3. My son will graduate from the Naval Academy at that time and since this is the date of his June week I will not miss it even at the expense of our reunion. I am assistant manager of Calco Chemical Division, American Cyanamid Company, at Gloucester City, N.J., making TiO_2 . Have recently become a grandfather, my oldest daughter having a son born in May." — **Freddy Given** writes: "Thanks for your card reminder of

the coming 30th reunion. I plan to be on hand. As for news, the Given family has had an eventful year. My daughter was married last month. As you know, we also have a new address because of selling a large house and buying a smaller one. Also expect that before the year ends I will be located at the Bell Laboratories' new building at Murray Hill, N.J."

Blake Darling writes from California: "I have your post card concerning the 30 year reunion of 1919. Probably I won't be there, much as I would like to. The only eventful occurrence in my life is that I became a grandfather September 25, to a boy named Charles Robson Darling. Hope this finds you in good health. Please give my regards to those classmates who may remember me." — **Grant Green** says he will attend the reunion if he can. — **Duke Herzog** writes: "Same address, same place. Depends when reunion will be held. However, would like to be there. Occasionally see Dutch Seifert, Dick Cashin, Doc Burchell '20 at Chicago alumni functions."

Word has reached us and we regret to announce the death of George P. Gail on May 1 in Baltimore, Md., and also the death of Ray Powers on September 7 in Berkeley, Calif.

L. A. Gillett writes: "Haven't much news in this rather off-the-beaten-path place. However I'm still busy as chief engineer of the Virginian Railway and am doing a large power plant rehabilitation and expansion job up on our electrified division. Gibbs and Hiel of New York are our consulting engineers and in their organization are quite a number of experts who are M.I.T. graduates. I enjoy working with them. Can't tell about reunion yet. Will try." — **Maurice E. Goodridge** writes: "The address is right. You must get awful angry at some of us. An annual card and seldom a reply. My personal affairs would be of little interest and my business connection has been the same for several years, Worcester County Electric Company, Power Sales. Regret to have missed June alumni meetings but daughter had been ready to come home from her college on that weekend so I lost out. Hope dates work out better this June and I will try to make it."

S. J. Hayes dropped the following lines: "Not much news in a busy everyday sort of life. Younger twin daughter, Evelyn, was married July 24. Older twin, Lillian, expects to marry on February 5. Youngest daughter now in last year of junior high school. Twins graduated from Tufts last June. Occasionally get out to the Connecticut Valley M.I.T. Club, but have not run across any classmates. Am always amazed these days to find that the 'teen classes are distinctly 'old timers,' and slightly shocked when these 45's, and 46's and 47's speak to one so respectfully, and add a sir to their remarks. 'Gosh, ain't we getting old!'"

The following are changes of address: **Arthur E. Wales**, 115 Oak Hill Avenue, Attleboro, Mass., has moved from Providence, R.I. — **Timothy E. Shea**, President, Teletype Corporation, 1400 Wrightwood Avenue, Chicago 14, Illinois, has moved from New York, N.Y. — **EUGENE R. SMOLEY, Secretary**, The Lummus Com-

pany, 420 Lexington Avenue, New York, N.Y. ALAN G. RICHARDS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

• 1920 •

At the recent meeting of the M.I.T. Committee on Financing Development, a number of our illustrious classmates were present including Ed Ryer, Bat Thresher, Pete Lavedan, Perc Bugbee and Warren Chaffin. Warren looks exceedingly fit, by the way, hardly any older than he did in his undergraduate days. Pete Lavedan had previously been thoughtful enough to write me about his new claim for qualification in the granddaddy class. His granddaughter, Madelein Denise Scott, was born in Minneapolis on October 30. Pete says he can now join the other grandfathers in the Class in looking down his nose at those who are less fortunate. There must be quite a few of them but they certainly have been backward about admitting the fact. We think Pete has the right attitude. He is a grandfather and proud of it.

Melville W. Powers, Commander, U.S.N., retired, has been named director of Pratt Institute Evening School of Science and Technology. Donald Royce, Rear Admiral, U.S.N., is located at the Brooklyn Navy Yard. Charles E. Packard is now a professor at Randolph-Macon College, Ashland, Va. Grant French has moved to Valparaiso, Ind. Earle Fairbrother is still in Canada but has moved to Galt, Ontario. — Word has been received of the death of two classmates, George H. Crocker, formerly of Brookline, Mass., and Frank D. Wilcox. Your Secretary has no further information except the fact that Wilcox died on April 18, 1943. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

A patent on an automatic bending device which incorporates an entirely new principle has been issued to Ralph M. Shaw, Jr., President of the Pedrick Tool and Machine Company of Philadelphia. Rufe, whose letter leads the month's returns from the secretarial committee, says this is his 15th patent. He is editing the section on bending of metals for the forthcoming handbook of the American Society of Tool Engineers. The letter continues: "Edwin L. Rose had dinner with me recently, the first time I have seen him in over a year. Ted is vice-president of the Drinkolator Corporation, 342 Madison Avenue, New York 17, N.Y., manufacturers of portable soda fountains. He has a staff of engineers engaged in redesigning and rebuilding the line. Ted now makes his home in Katonah, N.Y.

"George A. Chutter has expanded his staff as a manufacturer's representative, covering New England, New York, New Jersey and Pennsylvania from his headquarters at 15 Exchange Place, Jersey City 2, N.J. Besides the Pedrick line, George handles the products of the Global Division of the Carborundum Company, the Harper Electric Furnace Company and the H. J. Ransburg Company. William R. Matthews heads the machine tool sup-

ply house which he organized, the W. R. Matthews Machinery and Supply Company, 417 West Second Avenue, Spokane 8, Wash. From Spokane and a branch in Seattle, Bill covers Washington, Idaho and Northern Oregon with a representative line, including Pedrick, and is probably the best-known supplier in the area. He is married and has four children."

Hazen C. Pratt, formerly of Minneapolis, now receives his mail addressed to Route Number 1, Anoka, Minn. William L. Knoepke is controller of the American Lead Pencil Company, Hoboken, N.J., and makes his home at Short Hills, N.J. Roy A. Wehe is assistant director of the California Public Utilities Commission, Sutter Building, San Francisco 4, Calif.

From the New Bedford, Mass., *Standard-Times*: "Fifteen-year-old Pat Lesser, daughter of Colonel Louis L. Lesser of Seattle and formerly of New Bedford, is the youngest City Women's Golf Champion Seattle has had. She won the honor by defeating the five-time holder of the State Women's Golf Championship. In four big tournaments, including the PNGA in Canada, she won two championships and went to the semi-finals in the other two. She holds four course records for women, hit two rounds recently in even 70's and, when only thirteen, was state medalist in the public links tournament. Her father taught military science in New Bedford High School from 1933 to 1938 and was in charge of the ROTC. A Massachusetts native, he was graduated from M.I.T. and was commissioned a lieutenant in 1921. He is a veteran of both World Wars and suffered injuries in the last war which brought about his retirement."

John W. Barriger, 3d, President of the Monon, delivered a comprehensive address on "The Interest of Railway Management in Safety" to a recent meeting of the National Safety Council in Chicago. Jack's continuing accomplishment of his forward plans for complete modernization of the century-old "Hoosier Line" has now extended to money-saving relocation of the right of way in order to eliminate restrictive grades and curves, crossing hazards and at least one trestle. — Alexander J. Lapointe turned up at the fall meeting of the M.I.T. Club of Northern New Jersey as a full-fledged member by virtue of his residence in Newark at the Athletic Club. He is associated with the Egyptian Lacquer Company. Others present were Mor Aronson, Max Goldberg, Sumner Hayward, Fred Kowarsky, Ed Lockwood and your Secretary.

Charles A. Williams has a new home address at 311 St. Ronan Street, New Haven 11, Conn. Charlie is vice-president of the United Illuminating Company. Elliot T. Adams, a medico on the staff of Tufts Medical School and our reunion story-telling champion, has forwarded a new mailing address, Post Office Box 47, Uphams Corner Station, Boston 25, Mass. Paul L. Hanson is a partner in the Northwest Kold-Draft Company, 1639 Hennepin Avenue, Minneapolis, Minn. Glenn Stanton, who has his own architectural office in Portland, Ore., is now the secretary-treasurer of the M.I.T. Club of Oregon and an honorary secretary of the Institute for Portland. Robert E. Guthrie,

a colonel in the Corps of Engineers, is stationed in Santa Barbara, Calif.

Says Class Agent Lark Randall: "This is the day after election and it's raining hard, so the nimble phrase is not forthcoming like the 'flowers in spring, tra la.' As of November 1, we were leading our decade group with 81.4 per cent in contributors and 83.4 per cent in amount. To me they look like figures from Dr. George Gallup who, no doubt, will have fled this vale of tears ere this is published. Our quotas, you know, are for a third of the Class, so how about underwriting a little milk for alma mater's new children?"

Howard F. MacMillin, President of the MacMillin Engineering Corporation, has announced the opening of new and enlarged offices at 6806 North Clark Street, Chicago 26, Ill. Howard's staff includes design, consulting and sales groups specializing in hydraulically operated machinery and oil-hydraulic power systems and components. Among the clients represented are the Gerotor May Corporation, Towler Brothers, Limited, Compressed Air Products, Linear, Inc., and the Flodar Corporation. — Ernest Henderson, President, and Robert L. Moore, Vice-president and Treasurer, Sheraton Corporation of America, now have a total of 28 hotels in their rapidly expanding chain, as well as a new slogan, "Hospitality for the Nation."

We all mourn the passing of Professor Emeritus Charles E. Locke '96, beloved by his former students and by all class secretaries, whom he served so well in his capacity as secretary of the Alumni Association.

Your Secretary will be glad to receive changes, additions or corrections for any of the listings in the recently issued Alumni Register, particularly the World War II military records and decorations. For the statistically minded, there are listed in the volume 917 living members of the Class of 1921 and 101 who have left our ranks.

David O. Woodbury has added psychic powers to his other accomplishments. The following report was written from his Bronxville, N.Y., home while we were preparing last month's notes on his latest book: "Since leaving the staff of *Collier's Magazine* in September, 1947, I have been doing mainly magazine work with contributions to *Coronet*, *This Week*, *Science Illustrated* and others. One of these was the story called 'New England's Trillion Dollar Mile,' which explained the setup around the Institute along the Charles River. Another was a biographical sketch of Dr. J. Robert Oppenheimer, a good friend of mine, in which I managed to dig out the fact that he is an expert cowboy and desert camper, something few physicists can boast. Right now I am entering my second assignment as a civilian government expert, having been engaged to write *The Citizens Handbook of Atomic Energy* for the United States Atomic Energy Commission. My first government assignment was as a speech writer for the Surgeon General, United States Army. I am also preparing a book for the National Electrical Manufacturers' Association on varnished insulation. This is calling forth the very dregs of my dim memories of electrical engineering. Between times, I'm

attempting to launch a series of half hour television dramatizations based on the great moments in the history of scientific discovery.

"Apart from these diversions, I'm doing little but lecturing on atomic energy before clubs and schools. In January, I will drive to California for a month's tour of the west coast to introduce this lecture, which is called 'Atomic Energy for Peace.' It features an invention of mine, a small projection machine with which I make bright line drawings and diagrams on the screen as I talk. I am planning to move to California in the fall of 1949 to take up lecturing in a big way. As you know, I had a book published last June, the Westinghouse war history *Battlefronts of Industry*. Recently *The Glass Giant of Palomar* began its tenth year with a new revised edition and is now selling with encouraging rapidity. The Institute has put me on the Financing Development Committee and American Airlines has made me an admiral of the Flagship Fleet, sans uniform, sans discount!"

Start the new year right. Mail that note on your own doings now. — CAROLE A. CLARKE, *Secretary*, International Standard Electric Corporation, 67 Broad Street, New York 4, N.Y.

• 1922 •

Members of the Class who have accepted membership on the new M.I.T. Committee on Financing Development are Alden, Alder, Blackall, Bower, Boyer, Carpenter, Chittick, Crofton, Dandrow, Davis, Dillon, Dimmick, Edwards, Whit Ferguson, Warren Ferguson, Givner, Grover, Haskell, Hindes, Holderness, Huger, Humes, Keith, Koch, Kurtz, Lang, Larner, Laughlin, Linsley, MacKenzie, MacMahon, Minton, Mueser, Nicholson, Purinton, Ramsay, Ramsey, Reynolds, Rudderham, Rundlett, Bob Russell, Ryan, Seegal, Spear, Sutherland and Vilett. Among those your Secretary saw at the initial meetings on November 19 and 20 at the Campus Room in the Graduate House and Hotel Statler were Dandrow, Edwards, Whit Ferguson, Warren Ferguson, Grover, Holderness, Humes, Haskell, Linsley, MacKenzie, Mueser, Payne, Ryan Sutherland, Tonon and Vilett.

An informal class get-together will be held in New York about the middle of January, the date, as of the writing of these notes, has not been definitely set. Any out-of-town members of the Class who are planning to be in New York about that time are cordially invited. You may obtain details regarding time and place by writing or telephoning Clayton D. Grover, in care of the Whitehead Metal Products Company, 303 West Tenth Street, New York City; telephone, Watkins 4-1500.

The new Directory for 1948-1949 of the Alumni Association shows that '22 men are still maintaining active interest in Alumni affairs. George Dandrow is president of the Alumni Association and the Alumni Council. Fred Blackall, Horace McCurdy and Tom West along with Dandrow are alumni term members of the Corporation. Minot Edwards and John Williams are both members at large of the Alumni Council, being members of the national nominating committee. Bob

Tonon is class representative on the Alumni Council while the following are Alumni Council representatives of M.I.T. Clubs: Warren Ferguson, Chile; Dale Spoor, New York; Tom Shepherd, Western Pennsylvania; Parke Appel, Utah; and Karl Wildes, Schenectady. On the various committees of the Association, Warren Ferguson is on assemblies and Bob Tonon is on nominations for local associations. Parke Appel, as you all know, is class agent. Alumni representatives on departmental visiting committees are Paul Ryan, Business and Engineering Administration; William Heavey, Military Science and Tactics; and Ted Miller, Modern Languages. Officers of local clubs are: Albany, F. Reed Dallye, President; Buenos Aires, Roberto J. Ottonello, Secretary-Treasurer; Newark, Clate Grover, President, Douglas MacDonald, Treasurer; New York, Sam Reynolds, President; Oslo, Claus M. Thellefsen, Secretary; Philadelphia, Henry S. Dimmick, President; Springfield, Minot Edwards, President. Honorary Secretaries include the following: District of Columbia, Harry H. Fisk, Bill MacMahon and Bob Thulman; Atlanta, Bill Huger; Wichita, Fred Koch; Augusta, Maine, Bob Purinton; New Jersey, Irvington, Bill Grady, Morristown, Ed Vilett, Trenton, Tom Gill; Buffalo, Whit Ferguson; New York City, George Dandrow, Larry Davis, Dunc Linsley, Bill Mueser, Ray Rundlett; Syracuse, Ed Gruppe; Philadelphia, Phil Alden, Bill Stose; Bogota, Colombia, John Bower; Switzerland, Werner Schoop.

The Rev. Lester C. Lewis, and Mrs. Lewis were recently tendered a large reception in Brockton, Mass., on the occasion of their 20th wedding anniversary. A large gathering of parishioners and friends from Lexington, their home town prior to going to Brockton, joined with the Brocktonites in this observance. Dr. Lewis holds degrees of B.S., S.T.B., M.S. and Ph.D. Following graduation from Technology, he studied at Harvard, Union College and Harvard Divinity School, as well as at the University of Leipzig and the University of Hamburg, from which latter school he received his doctor of philosophy degree. Dr. and Mrs. Lewis are prominently identified with the civic life of Brockton where Dr. Lewis is rector of the Unity Church. He also serves as secretary for the Brockton Committee for Economic Development. The Lewis' have three children: Constance Helen, 17, Warren Frank, 15, and Sara Hawthorne, 12.

On October 18, Charles Hall Baker, Cape Elizabeth, Maine, real estate broker, was nominated by Maine Governor Horace Hildreth as a member of the Maine Real Estate Commission. — A recent issue of *Industrial News* contains a picture showing Crawford H. Greenewalt, President of E. I. du Pont de Nemours and Company, receiving the 1948 Drexel Award on behalf of his company, from James Creese, President of Drexel Institute of Technology of Philadelphia.

New addresses: C. Ford Blanchard, 903 South Frederick Street, Arlington, Va.; Joseph M. Cosgrove, 3115 Grand Boulevard, Brookfield, Ill.; Paul M. Phillips, 17 Andover Drive, Short Hills, N.J.; Donald R. Waugh, in care of Fred Eldean Or-

ganization, Inc., 100 Boylston Street, Boston, Mass. — Children at school: Harold O. Berry's son, Warren O. Berry is a senior at Technology living in Westgate. His other son, David N. Berry, is a senior at Amherst. — C. YARDLEY CHITTICK, *Secretary*, 77 Franklin Street, Boston 10, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

Pete Pennypacker set out to get some pictures in an attempt to document the tale Alan R. Allen told of getting to the reunion last June. Pete's letter caught up with Alan, again in Teheran, and Alan obliged with pictures. These, unfortunately, arrived too late to be reproduced in the 25th reunion report. They include a snapshot of a group starting off on a trip in a modern airliner. Then there is the picture of the camel to which our traveling salesman transferred after the airliner, and also a jeep, had failed to complete the journey which was, we understand, to sell a cement plant somewhere in the Near East. The camel got him there. Part of the camel's cargo it appears was molasses in somewhat primitive containers. The final picture of the series shows safe arrival at destination with bags, bundles of blueprints, a four days' growth of beard and a liberal spattering of molasses.

One item which got crowded out last month by the backlog of notes was the announcement by Mr. and Mrs. Rolla Warren Norton of the marriage of their daughter, Barbara Ann, to William Lyman Stewart, 3d, son of Bill Stewart, Los Angeles, on August 14 at San Marino, Calif. — Milton E. Parker, native of New Bedford, Mass., was the subject of a page story in the *Standard-Times* of that city on October 10. The story deals with Parker's work in food technology and includes pictures of the campus and food laboratories at Illinois Institute of Technology, Chicago, at which Parker is professor in charge of the food technology program. — HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Battery-march Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, 60 John Street, New York 7, N.Y.

• 1924 •

The New York region of the class anniversary fund is well under way. Our second meeting was held at the Architectural League on November 18, and was attended by 31 members of the Class. Nat Schooler, as usual, was there and was our host for the refreshments, and a grand job he did, too. Class President Bill Robinson, from Cleveland, was on hand. Many members were present whom we had not seen for many years. Under the able direction of Nat, at our previous meeting each of the key members present had selected a number of residents of greater New York from whom they had agreed to solicit contributions. While actual results were lagging somewhat, ample evidence was shown that much time and thought was being given by each of those present in the attempt to obtain subscriptions from the balance.

Bill Robinson outlined the general plans for the 25th reunion which begins on June 8 at Osterville, and at this time there are about half a hundred reservations in the hands of Russ Ambach. With such a good showing at this early date, we are expecting at least 200 members in attendance next June. Remember, get your reservation in now, for once the main hotel is filled up, the balance must go into surrounding cottages.

It was generally agreed that each of us who had not kept up our insurance policies should shoot for subscribing for a minimum of \$250 towards the class fund. We have voluntarily set a goal for the New York area of \$15,000, and if we reach it, I think it will be a real goal for every other major territory to shoot for. That's a little less than half of what we must get at a very minimum if 1924 is to establish the finest record ever made and donate an amount of six figures to the Institute.

One P. H. Littlefield, a member of the vice-presidential class, has cheerfully accepted the chairmanship of the refreshment committee at our reunion at Osterville. Step right up boys, for that assures us of ample quantities, at prices which will only permit a 30 per cent profit to dear old Canada Dry.

At the November 18 meeting, those present included: A. S. Anderson, Gordon Billard, Bill Blaisdell, Howell Brown, Tom Bundy, Paul Cardinal, Grif Crafts, Bill Delehanty, George Disomma, Dave Evans, Johnny Grabfield, Walt Gress, Anatole Gruhr, Frank Hecht, E. Honigman, Julian Joffe, Art Kemp, Ted Kenyon, Bill Keplinger, Harold Kurzmann, Ray Lehrer, Mal MacNaught, Jack McCoy, H. N. Madden, Perry Maynard, H. H. Razzack, Bill Robinson, Bill Rowe, Nat Schooler, Greg Shea, Carl Vicario and Henry Zeiger.

Frank Barrett wanted to come down from Providence, but couldn't, as a meeting of the New England Council was scheduled for the same night. Chick Kane sent his regrets, too. However, they're both busy up Boston way. A meeting was held there on December 8 to get things rolling. Ray Lehrer, who is cochairman of the whole show (with Cy Duevel), gave a group of key men the whole story. Lefty Walker is heading up the activity there. Ray and Cy have appointed a number of regional chairmen in other parts of the country, and the next few months should put us in the money. More next time, but let's get going in a big way on raising the balance of our gift. It isn't too hard. Three hundred men at a \$100 each or 600 at \$50. We can do it! — FRANCIS A. BARRETT, *General Secretary*, 234 Washington Street, Providence, R.I. WILLIAM W. QUARLES, *Assistant Secretary*, McGraw-Hill Publishing Company, 330 West 42d Street, New York 18, N.Y.

• 1925 •

The members of the Class and especially those of Course III join the Institute family in mourning the death of Charles E. Locke '96. Those who were closely associated with him no doubt feel his loss more keenly, but as a class secretary, I can add that he was always a

great help in keeping me posted on the activities of Course III men, and through me, the rest of the Class. I am sure other secretaries will join me in this.

While passing through Cleveland last June I had an opportunity to talk with Harrison Browning on the telephone. He gave me several items about members of the Class, but to my regret I am unable to locate them at this writing and can only promise to include them later if I find the memo.

The balance of these notes is based on a series of clippings and releases which have accumulated since the notes were sent off for the July issue of *The Review*. George F. Chapline, XVI, was made a vice-president of Fairchild Engine and Airplane Corporation on May 28. He remains general manager of the Ranger Aircraft Engines division at Farmingdale, L.I. — Archer M. Nickerson Jr., II, gave a talk to former C.I.'s at Fort Devens in June, describing the opportunities for engineers and mentioning the improved financial status they enjoy today as compared with 23 years ago. This talk was part of a series aimed at acquainting University of Massachusetts students with job prospects. Arch is a supervising marine engineer at the Fore River Yard of Bethlehem Shipbuilding at Quincy, Mass., and lives in East Weymouth. — Joseph S. Lanigan, XV, was married on June 5 to Anne Catherine Moran, daughter of Mr. and Mrs. Harry Leo Moran of Belmont. Their new home will be in Cambridge. — B. E. Groenewold of Tulsa, Okla., and a Course X graduate, has resigned from Bethlehem Supply Company, where he has been in charge of drilling equipment and engineering sales since 1940, to accept appointment as chief engineer and assistant to the manager for the Exploration Drilling Company of Tulsa. Ben was with the National Supply Company for 14 years before going with Bethlehem. He is a member of the Tulsa Engineers Club, and the Tulsa chapter of Nomads. This change was announced at Tulsa on July 5.

Cuthbert Daniel, X, addressed a group of citizens at Bridgeport, Conn., on July 8, in connection with the formation of a committee to prepare for local observance of Atomic Energy Week in October. He was located at Oak Ridge during the War, with the Manhattan Project, and is now in New York City. He urged "a lot of thinking" on the part of citizens because this country "has the most to lose." — Arthur F. Merewether, an Air Force colonel during the War, was awarded the Legion of Merit by the United States Government and also received a British award as a result of his meteorological work on the North Atlantic Ferry route. He and Mrs. Merewether now reside at Bayside, L.I., and he is with the American and American Overseas Airlines as head of their weather service. — The Rev. Robert Stansfield of New York paid a return visit to North Reading, Mass., where he had his first pastorate. He became interested in the ministry while director of the C.C.C. camp in Harold Parker State Forest during the nineteen thirties. In addition to serving as pastor of the First Baptist Church in North Reading, he has also been at Blaney Memorial Church in Bos-

ton, and is now located in Auburn, N.Y. He was a chaplain during the War.

Henry C. Hoar, formerly manager of the St. Louis office of National Tube Company, became manager of the Pittsburgh sales office of that company early in August. Hank has been with National since 1927, and was in charge at St. Louis since 1946. — Alfred Malagodi of Whitman, Mass., Assistant United States Attorney, received news mention on August 13 through being assigned to New Bedford for one day each week. He has been associated with the department of justice for 10 years, processing both civil and criminal cases. He obtained his legal training at Boston University law school and was in private practice before entering government service. — James C. Evans, VI, negro aide to Secretary of the Army, Kenneth C. Royall, reported for publication that the Army had been more attentive to the problem of race relations than any other government department. The quotation is from a signed article in the *New York Times* by Walter H. Waggoner. Evans listed a number of publications which are circulated to officers and chaplains to improve human relations between men of different races in the Army. He stated the corrective action is taken when officers seek to evade the policy.

Julien J. Edgerly, formerly of Fall River, has been assigned to duty as electronics officer at the Naval Supply Depot at Mechanicsburg, Pa. Commander Edgerly will also act as technical assistant to the supply officer in command where electronic matters are concerned. He was a sound technician in Fall River theaters for seven years, and entered naval service in 1941, thereafter being selected to go to England with a group of 48 radio engineers as radar observers. From September, 1942, to October, 1943, he was radar officer on the staff of the Chief of Naval Air Operational Training Command at Jacksonville, Fla., and during this duty he set up a radar training program at naval air stations along the southeastern coast of the country. After six months in Washington, he spent the remainder of his wartime service in the Pacific, winding up as officer in charge of the communications planning section and shore electronics officer on the staff of the Commander, Service Force, Pacific. Until his recent appointment he was officer in charge of engineering at the Bureau of Aeronautics General Representative Staff, Naval Ship Yard, New York. — Alec Ulmann appeared in Charles B. Driscoll's syndicated column, "New York Day by Day" on September 30 as a result of his comments to the columnist about Wichita, the latter's home town, where he was stationed on airplane inspection work during the War. He is now a wholesale airplane broker, and "finds planes for foreign governments when our government approves." His office is on Madison Avenue in New York.

This brings us up to date except for those missing notes of my conversation with Browning. Hope I'll find them in time for next month's column. — HOLLIS F. WARE, *General Secretary*, Post Office Box 52, Godfrey, Ill. F. LEROY FOSTER, *Assistant Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

The Secretary has had the pleasure in recent weeks of welcoming to the Institute several members of the Class. First of all, Bob Brand, now in the advertising business in Rockford, Ill., was here during the course of a trip with Mrs. Brand to visit their children, who are in several eastern educational institutions. E. C. Van Blarcom, who is superintendent of the zinc plant of the Anaconda Copper Mining Company in Great Falls, Mont., also visited the Institute during a trip to bring his daughter back to Mount Holyoke, where she is an upperclassman. (The Secretary also has a daughter at Mount Holyoke in the freshman class.)

At the meeting of M.I.T.'s new Committee on Financing Development, held in mid-November, the following '26 men participated: Eben Haskell, Dick Jones, George Edmonds, Bob Dawes, and Dave Harrison. Other '26 men who are members of this committee include Bob Brand, C. S. Canals, Gilbert Caro-Delvaile, Sam Homsey, Joe Houghton, Varnum Howe, John Kimberly, George Leness, Walter Lobo, Ed McGrew, Kenneth Morse, Bill Rivers, John Schaefer, Dave Shepard, George Warren Smith, Fred Walch, and Abraham White.

It is gratifying to report the election of George P. Edmonds to the presidency of the Wilmington Trust Company in November. He has resigned as president of Bond Crown and Cork Company, a subsidiary of Continental Can, to devote all of his business time to the bank. George is also a member of the finance committee of the United States Rubber Company and of the executive committee of the Warner Company. — A recent letter from Bill Forrester brings news that he has been elected financial vice-president of the Hartford Fire Insurance Company and is now living in Hartford. He had been a partner in the firm of Lazard Frères and Company in New York.

Frank Schreiner's new title is that of manager of the Cleveland office of Pratt and Whitney. — Bud Wilbur, head of the Institute's Department of Civil and Sanitary Engineering, has become associated as a consultant with the firm of Fay, Spofford and Thorndike, "assisting particularly on structural engineering problems of a complex nature." — Jim Drain's new letterhead reads, "Joy-Sullivan of Canada Ltd., 175 Beverly St., Galt, Ontario." His title is that of vice-president/general manager.

We read in the *Wellesley Townsman* of the wedding of George Wardner and Louise Marsh of New Bedford, which took place last June. They are now living in Wellesley. Mrs. Wardner is a graduate of National Park Junior College. — Valentine Harrington, formerly with B. B. Chemical Company in Cambridge, is now research director of the Brock Chemical Company, North Abington, Mass. Dewey Hand is now sales engineer for United States Steel Products Company in Los Angeles, and Robert Harte is industrial engineer for E. R. Squibb and Sons in New Brunswick, N.J. Also in New Jersey, Anthony Gabrenas has opened his own civil engineering firm, Spencer and Gabrenas, in Trenton.

Only recently did we learn of the death, on August 9, of Dr. Y. Subba Row. A graduate of Madras Medical College and a former student in chemistry at the Institute, he had for several years been director of research at the Lederle Laboratories in Pearl River, N.Y. — JAMES R. KILLIAN, Jr., *General Secretary*, Room 3-208, M.I.T., Cambridge 39, Mass.

• 1927 •

The mail bag is practically empty this month. Colonel Lloyd McAdam tells us that he now lives in the country at Vienna, Va., "surrounded by five acres and a dozen large maple trees, plus a great deal of quietness. However, the telephone number is Vienna 368-W." During the daylight hours he is at the Pentagon Building. — Indirectly, we have learned of the engagement of a daughter of Bill Taggart's to John E. Kent of Bronxville, N.Y. Bill lives in Belmont, Mass. — JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, Inc., 50 West 50th Street, New York 20, N.Y.

• 1937 •

Our plan of letter writing is now paying off with nice notes from some of the fellows. Al Woll, who is an oil producer in Lawrenceville, Ill., writes: "Not long after the reunion, Milt Lief took on another position in St. Louis. He is now associated with the American Fixture and Manufacturing Company in the capacity of production engineer. About that time, Mrs. Lief presented Milt with a boy. This past summer Milt and Harold Strauss'38 visited us one Sunday. As for news here, you can't expect too much in this thriving metropolis of 7,000 souls. As I expressed it recently to Professor Schell'12, Lawrenceville is 250 miles south of Chicago, 150 miles east of St. Louis, 225 miles west of Cincinnati, 125 miles southwest of Indianapolis and 124 miles northwest of Louisville. Or, Lawrenceville is in the middle of nowhere, and so many miles from anywhere. For the past few weeks the Woll domicile has been in a turmoil. On October 25 a son, David Lawrence, was born to us. Windy, I'll guarantee that he was born with a great deal more hair than you have now. At three weeks old he has his own comb and brush and a bottle of oil. With the advent of winter, we are busy making preparations for hibernation with any dismantling or construction. Meanwhile, when the old snow flies we will continue to feed you the fuel oil. On the farm, we completed our harvest of corn yesterday. We picked 106 bushels of corn per acre. It is no wonder that we have a bumper crop of corn. That means feed for cattle will be cheaper, and soon beef and fowl will be cheaper, at least by next spring. Now that I have kept you warm for the winter and fed you for the spring, I guess I'll hibernate."

I heard from Jim Newman the other day. He is located in Chicago with Booz Allen and Hamilton, consulting engineers, where he is in charge of personnel. Jim continues: "As an adjunct to our survey work we are often called upon to assist our clients in locating top executive personnel. In this connection I have had

occasion to sit down and chat with some of our classmates. When I think of the grand fellows we knew at school, it seems a shame that we should have drifted apart over the years. From time to time I have been in touch with some of the fellows from school, but have not heard of your adventures since we left. I often think back to the days at the Institute which seem so far away and wish that we could live them over again. Some things I believe I would do differently a second time, but on the whole the memories are very pleasant and I miss the gang."

And from Louis D. Bloom in Philadelphia with Publicker Industries, Inc., where he is manager of the new products division: "I have at last caught up with reading *The Review* and I note that under 1937 things are rather dead. I realize that most of the fellows reacted as I did and there is good reason for it. In my case, I have moved around so much that I have very little time for consideration of alumni activities and in the case of a few friends I had at the Institute with whom I tried to keep in contact, for some reason or another I lost track of most of them. I have worked in Philadelphia, East Liverpool, Ohio, Pittsburgh and I am now back in Philadelphia with several jobs in most of these localities. I have been with Publicker for over four years and it looks like I have stopped rolling around at last. Our division includes chemical research, biological research and a manufacturing group together with a market developing group. We have had a great deal of expansion and postwar deflation in our division but it looks like we are now on our way. I am living out in Richboro, Bucks County, Pa. I have been married nine years and have a boy six years old." Thanks fellows for the news. I was recently at a meeting of the M.I.T. Club of Northern New Jersey where I ran across Dick Gidley and Cleon Dodge, who are living in that area, both looking and doing fine.

Our class gift committee is now functioning and had its first meeting on November 3. Its members are Bob Thorson, Joe Heal, Bob Harris and Phil Peters. They are to send out a questionnaire (which you will probably have by the time you get this) and map out the campaign from there.

We note from the press that William T. McHugh has just been awarded his M.S. degree in public health. This was delayed action of some kind, since the work was done with us in 1937. He is superintendent of the Cambridge Sanatorium. — Gardner Barker, who is living in Brookline, Mass., has been appointed director of new products in the Pepsodent division of the Lever Brothers Company. He received his master's degree in Course XV. — Walter H. Sherry has set up shop as a consulting engineer in electrical power and lighting systems located at 402 Curtiss Building, 361 Delaware Avenue, Buffalo 2, N.Y. He is also a professor of electrical engineering at the University of Buffalo. — WINTHROP A. JOHNS, *General Secretary*, 34 Mali Drive, North Plainfield, N.J. WALTER T. BLAKE, *Assistant Secretary*, Research Products Development Division, Pillsbury Mills, Inc., Minneapolis, Minn.

• 1940 •

Bonner Hoffmann brings us up to date with a good letter as follows: "Last summer I traveled out to Kearney, Neb., and was married to Arona Erickson. The day we got back to Chicago, Scott Brodie, chemist for the American Viscose Corporation arrived in Chicago for his vacation. I turned over my bachelor quarters to him while he was here. He is looking fine, and in spite of Leap Year and a new Studebaker convertible, he is still not married. I have had several positions since last I wrote, including a short siege with a management consulting engineering firm. At present I am connected with the Zenith Radio Company as industrial engineer, specializing in Materials Handling and allied arts. The plant is being entirely rearranged for the manufacture of television sets. We live across the street from the Chicago campus of Northwestern University and are pulling for Northwestern to go to the Rose Bowl and win. This should partially vindicate the honor of our city which has little more to boast than the last place Chicago Cubs, White Sox, Black Hawks and Rockets. Of course, there are the Bears and the Cardinals."

Bonner writes that the Chicago Junior Association of Commerce and Industry to which he belongs is trying to revise and bring up to date the city building code and that he has become very much interested in this work. — Lois Elizabeth Allen and Runyon Colie, Jr., were married on October 2. — Along about this time of the year we begin to wonder how we are going to get material for *The Review* next month. Will you help us out with a little news? Just address it to either of the following: H. GARRETT WRIGHT, *General Secretary*, in care of Garrett Construction Company, Post Office Box 629, Springfield, Mo. THOMAS F. CREAMER, *Assistant Secretary*, 6 Berkley Road, Scarsdale, N.Y.

• 1941 •

Our sincere apologies for failing to prepare notes for the last two issues. It so happened that both deadline dates found your Secretary scurrying around Europe and visiting various textile research laboratories in England and on the continent. I have been back just long enough to catch a second wind and bring you up to date on the activities of a few classmates. Carl Olson has recently been named chemical department sales representative of General Electric's Philadelphia office. Since leaving the Institute, Carl has worked in the Thomson Laboratories in Lynn and thence in the Wire Insulation Division of General Electric. Carl is married and has two children. — We received a very interesting commentary on the house-building activities of Fred Coder up in Haverhill. It seems that Fred and two of his coworkers at Western Electric's Haverhill plant were discussing the housing situation one night and concluded that the only way to alleviate the condition was to build one's own house. The co-operative venture that followed created a bit of a stir in the local papers. Anyway, Fred and his family, wife and two sons, have a solid home. — Beaver Turnock, who got his M.S. degree from the Institute in 1942 has recently

received the degree of bachelor of laws from the Franklin Thomas Backus School of Law at Western Reserve University. Lowell Schoenfeld has joined the faculty of the University of Illinois as assistant professor of mathematics. Schoenfeld received his M.S. at the Institute and his doctorate at the University of Pennsylvania. He has taught at Harvard and Temple universities. Cedric Chandler is an instructor in metallurgy at Stevens Institute of Technology. From Bob Blake (Wilson, Jr.): "Attending the fall meeting of the American Society of Mechanical Engineers in Los Angeles I ran into John B. Murdock and had a good talkfest. John, as you know, is with Herb Stein in their own venture, Pearlite Corporation. They say that they are learning a great deal and see real promise ahead. As for myself, I attended the University of California for a half year after leaving the Army in December, 1945. In August, 1948, I joined the Union Oil Company as an engineering trainee in the field department, and going through 15 months of oil field work saw the practical and interesting aspects of drilling for and producing oil. I am now functioning as an associate petroleum engineer in the southern division offices at Whittier, Calif. Fully half my time is spent in the field, which is to my liking, and then, too, the problems of petroleum production are fascinating in their variety. In short, I am quite pleased with my work. On the family side, however, I must report that my daughter, Kathleen, and my wife have been quite ill although there is very good promise of their early recovery. I hope to return in 1951 for our tenth reunion, if not before." Thanks Bob and best wishes for quick family recovery. It is only three years to the *Tenth*.

This is a very late announcement of Les Corsa's marriage to a Californian named Patricia. Les, who has just recovered from a short illness, returned to the Massachusetts General Hospital to continue his human isotope-tracer studies. You will recall Corsa's attendance at Harvard Medical School upon graduation from the Institute. — We were also pleased to hear of another bachelor who has settled down; Warren Meyers married Cynthia Houston and they have settled in Illinois. — John Mullen, well-known instrument company sales engineer, took Jane Carroll as his bride a few months ago in Nantucket. For a man who the papers say will settle in suburban Philadelphia, John has been very quiet. — Another of our Philadelphia classmates, Herb Moody married Lois Tomhave last summer. Herb is now supervisor of development engineering with the Resinous Products and Chemical Company of Philadelphia. — Penelope Pease became Mrs. Marshall Pease this fall. Marshall is with the Stanley Works of New Britain. — Elizabeth Carr was married to Ben Duffy in October. Ben was a lieutenant in the Navy during the War and attended the University of Colorado in addition to the Institute. — Marjorie Quinlan Swift now has a son, George, Jr., whose sister, Janet, is three years older. — Carl Mueller took Suzanne Carreau as his wife this last spring. At the wedding were a few familiar persons who haven't written for

years, such as Bob Demartini and Ken Spaulding.

Marion Stanford is engaged to Gardner Ketchum who is at present working toward another degree at the Institute. Butch Berman has announced sober intentions in connection with one Isabel Bergson. Butch has been teamed up with Les Gott in a precision casting outfit in Brooklyn since his return from a four-year sojourn in Europe. — Betty Segal is engaged to Stan VanGreenby, formerly of the Corps of Engineers, and at present connected with the engineering and construction firm of VanGreenby Brothers in Lowell, Mass. — Henry Vogel took Shirley Backert as his bride in June. Shirley, according to reports reaching us is a brilliant girl having copped half the scholastic honors at Duke University. Henry received his M.S. degree at Columbia and is at present a chemical engineer with Merck and Company in Rahway, N.J. — Another June wedding involved Betty Yagle and Cliff Muzzey. Betty is a Carnegie Tech graduate. — Marie Okland is engaged to Chet Hasert, who is at present an aerodynamicist with Fairchild's pilotless plane division in Farmingdale, N.Y. — From Farmingdale we hear that Doris and Elmore Pillsbury have a new member of the family, Sylvia Jean. Upon leaving the Institute, Elmore went to work at Fleetwings, Inc., in Bristol, Pa. About a year ago Fleetwing, which had become a subsidiary of the Henry Kaiser Corporation, pulled out of the aircraft business and became a manufacturer of Kaiser dishwashers and parts of the Kaiser automobile. At that time Elmore joined the pilotless plane division of the Fairchild Engine and Airplane Corporation and is at present senior aerodynamics engineer. Best wishes to you all. Similar congratulations are due Reid Weedon, our exroommate, and family for the arrival of Charles Weedon. Reid is with Arthur D. Little, Inc. Likewise, to Anne and Davis Dewey for the arrival of Davis, 3d. A final note. Dion Jump is now Mrs. John Macleod. — STANLEY BACKER, *General Secretary*, 101 Providence Road, Primos, Pa. JOHAN M. ANDERSEN, *Assistant Secretary*, Saddle Hill Farm, Hopkinton, Mass.

• 1942 •

Your erstwhile correspondent, Jack Sheetz, left the Institute in August to become assistant to the Deputy Chief of the Office of Naval Research. Before going he asked me to take care of the class notes. Under the influence of his eloquent plea, I agreed, and then did nothing at all about it during the time it took me to complete the Ph.D. thesis with which I have been struggling for the last two years. The notices may be expected to come along with improved regularity from now on provided someone sends me something to write about. The following material is mostly legacy from Jack, with meager additions from the clipping service, and has been accumulating only very slowly. Let's have some letters.

Among the mementos left by my predecessor is a program from the Alumni Banquet inscribed with the names of the 23 members who attended the sixth reunion held there. There is also on the

back of the program an announcement of the birth of Richard S. Freeman to Mona and Leon Freeman.

A number of our classmates have been continuing to push their way through one school after another. Clinton Cook received the degree of master of science in chemistry from the University of Vermont, while Donald Stansfield took a master's degree in city and regional planning at the Institute. Notice is received via the Army that Arnold Kluever, a lieutenant, has completed a two-year course in engineering sciences at Wright-Patterson Air Force Base. Charlie Prohaska set out for the University of California this summer after taking a master's degree from Wesleyan. There has been a rumor around here that Henry Lemaire has been at Cal Tech for a couple of years but nothing has been heard directly from him.

B. J. Driscoll is now located at the University of Southern California where he is an assistant professor of air transportation. Ed Edmunds is a process engineer for Davison Chemical Corporation. Earl Marble has been promoted to plant superintendent of the Newark, N.J., Facility of Federated Metals, while Maurice Katz is a vice-president of the aluminum division of Atlantic Steel and Iron Company. Dan Hulett indicates that E. W. Hanszen has added a daughter to his family and has moved to LaMarque, Texas, but gives no clue to the business connection he has there. Robert Gage has been elected secretary of the Berkshire M.I.T. Club. He is in the electronic business in Pittsfield, is married, and has two sons. Fred Olsen is designing distillation columns and so forth for Monsanto in St. Louis. He is preserving his balanced outlook by various intellectual endeavors which are too esoteric for my understanding, possibly because I'm not an engineer.

The procession to the altar continues unabated. Ed Edmunds was married to Charlotte Cornish, Wilfred Adey to Catherine Hodges, Dick Merritt to Dorothy Prince, Robert MacCready to Alice Howe, George Illich to Jane Stevens, Art Power to Elizabeth Swint, Arnold Fields to Mary Ann Boutwell, Clyde Hayward to Shirley Ferguson, Malcolm McGregor to Patricia Burditt, and John Collins to Elizabeth Ling. — GEORGE M. KAVANACH, *Acting Secretary*, Room 4-055, M.I.T., Cambridge 39, Mass. KARL E. WENK, JR., *Assistant Secretary*, 11 Ledge Road, Old Greenwich, Conn.

• 1943 •

We extend our heartiest congratulations to Phyllis and Stan Roboff who were joined by Gary Stephen Roboff on October 19. We have heard that their son and heir weighed six pounds five ounces when he arrived. Stan is with the United States Atomic Energy Commission at the Ansonia Station in New York City. — Frank French

has recently completed the requirements for his doctor's degree from the Chemical Engineering Department at the Institute. He is now with the Du Pont Company in Wilmington, Del. Joe Polack, who has also finished the same degree at Technology, has moved back into his beloved Louisiana and, I think, has taken a position with one of the oil companies there.

Dick and Betty Haas have just returned to the States after having spent the summer at Grenoble, France. While there, they both registered for a summer course or two at the University of Grenoble, tried their luck at Monte Carlo, basked in the sun of the Riviera, and apparently saw some of the Swiss Alps. They returned to New York after a few days' visit in England. Just before leaving this country this summer Dick passed the qualifying examinations for admittance to the New York Bar. He has accepted a post with Union Carbide and Carbon Corporation. — CLINTON C. KEMP, *General Secretary*, 29 Verlynn Avenue, Hamilton, Ohio.

• 1947 •

While there seems to be plenty of activity on the marital front this month, other news about the Class is practically nonexistent. There is an important letter, however, from W. R. Kincheloe, Jr., just forwarded from Johannesburg by Claude Brenner. I would like to quote some of it as follows: "While reading the recent issue of the alumni news, I saw the notice of the death of Harry Campbell, with the statement that no further details were available. Thinking that perhaps other members of his Class might be interested, especially those in the naval electronics course of that year, I am quoting from a newspaper clipping that tells a bit about it. 'The French coast guard said Tuesday night one officer and seven men from the U.S. aircraft carrier *Midway* were missing after a naval launch capsized about midnight Monday night. Navy boats operating in the glare of the *Midway's* searchlights rescued 29 other men clinging to the overturned launch or swimming nearby. The launch overturned while taking officers and men to the carrier after a farewell shore party given by French officials. The party was held at a Casino at the small island of Hyeres off the French Riviera. The launch was one of several returning personnel to the ship. There was a strong offshore wind but the sea was not regarded as dangerous by navy men.' Harry was assigned to the *Midway* after his graduation from the Institute in June, 1947, and performed the duties of the airborne electronics officer, supervising the installation and maintenance of the radar and radio units carried in the aircraft aboard this vessel. After the unfortunate accident described in the quoted article, a message from the Secretary of the Navy cited

Ensign Campbell, along with a number of others, for personal heroism when the motor launch was swamped. Harry was specifically cited for his diving in to assist those in the water having trouble, undoubtedly weakening himself in the effort, and resulting in at least the saving of one man. Harry was popular with the other officers and men on the *Midway*, and we felt his loss keenly. I understand his body has since been recovered and sent home for funeral services. As for myself, I have been assigned to the *Midway* as electronics officer since my graduation from the Institute in February, 1947, and am looking forward to the day when I can continue my graduate work in electronics."

On to those nuptials now, and a long overdue news clipping informs us that Al Pastuhov was married in June to June Adele Staples. Jean Ann Draffen wed Anthony F. Earley, Jr., last October. He attended New York Law School and is now a cotton broker with a Manhattan firm. Bill Lynch, Jr., who received his M.S. degree in Sanitary Engineering, plans to wed Helen Spencer of Clark Summit, Pa. No date has been set for the wedding. Arnold Judson of Tech Show and *The Tech* fame is engaged to June Brenner of North Easton. Arnold received his B.S. degree in Chemical Engineering and his S.M. degree in Industrial Relations. He is now working in the labor relations department of the United States Rubber Company in Providence. A spring wedding is planned by Gertrude Arlene Sullivan of Milton and Ed Dytko who received his S.M. degree here. Next June Jean Buckley of Chestnut Hill will marry Jose Rizo-Patron.

Word comes from Memphis that Ed Brandeau, who has been employed by the Rotary Lift Company there, will return to the Institute to accept a position on the research staff and to obtain his S.M. degree. Outward bound is John Kellett who received his S.M. degree in Chemical Engineering at the informal graduation last September. — After waiting patiently all summer for a visit from someone in '47, we finally had to journey last month to a party at the Deke house to see one again in the person of Dick O'Donnell. Dick is now working in New York but at the mere mention of the word *party* he can arrange a trip to Boston on a second's notice. Another Sigma Alpha Epsilon man we have not seen for years is Clint Murchison, Jr. At the recent meeting of the committee on Financing Development we noticed his name listed on the program as a representative to the committee from his section of Texas. We should like to take this opportunity to congratulate Clint on his appointment. To our knowledge, he is the only member of the Class on the committee. — JAMES L. PHILLIPS, *Acting Secretary*, Room 7-133, M.I.T., Cambridge 39, Mass.

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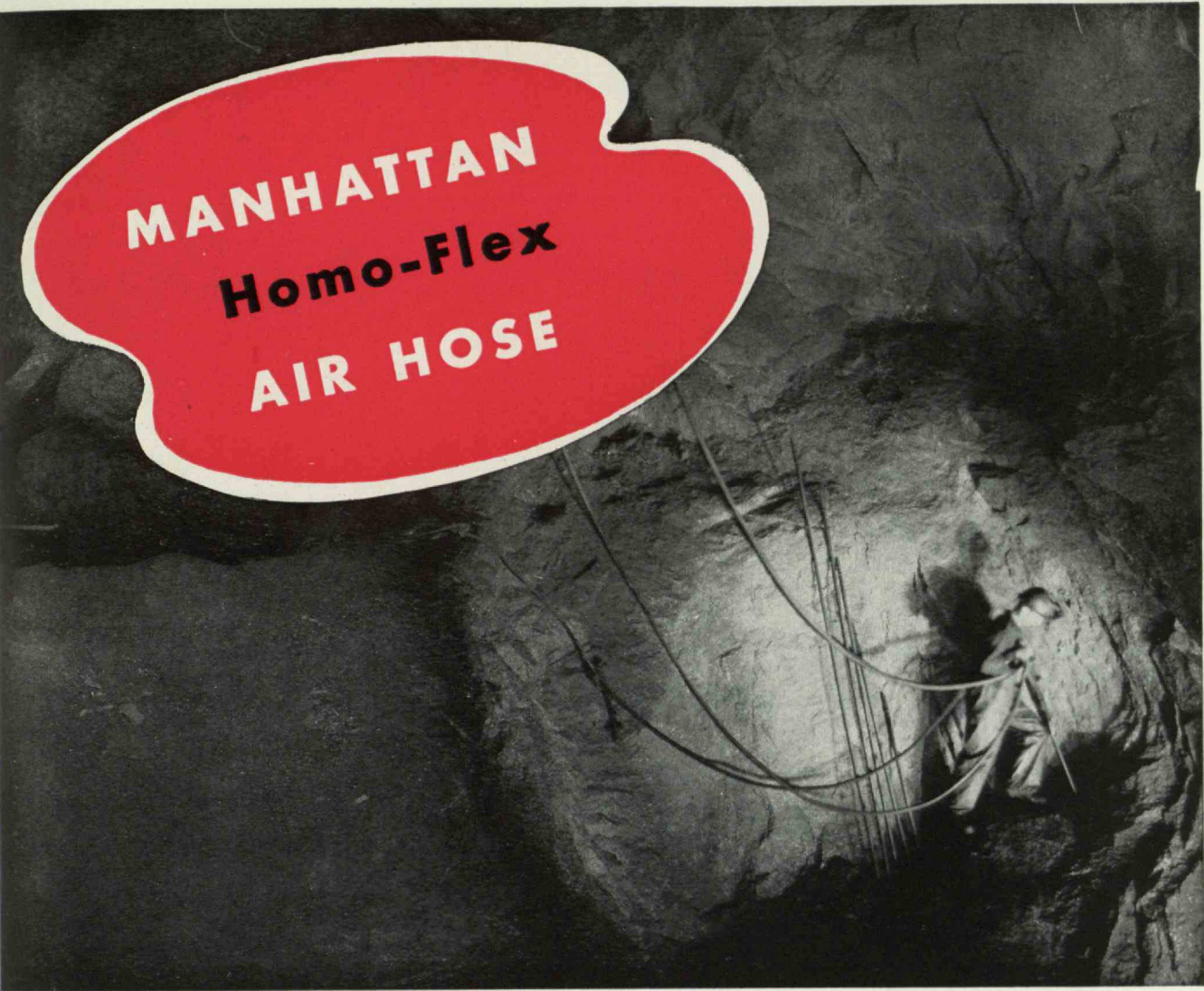
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